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With Which Is Combined

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Canadian Newsprint Situation Still Involved

Quebec Minister of Lands and Forests Mercier Reiterates Intention of Provincial Government to Prevent Price Cutting by Legislation—Charles Vining, President of Newsprint Export Manufacturers Association of Canada, Advocates Co-Operation Without Compulsion—Vigorous Reply to Criticism of Hearst Newspapers

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., April 2, 1935—There has been a certain liveliness in the newsprint industry here during the past week, with representative opinions being expressed for and against government intervention in the matter of newsprint prices, and with the head of the Newsprint Export Manufacturers' Association offering vigorous replies to the recent criticisms of J. D. Coffin, of the Hearst newspapers.

In the Quebec Legislature, the Hon. Honore Mercier, Minister of Lands and Forests, reiterated the intention of the government to bring in legislation to settle the price-cutting situation in newsprint, and expressed the hope that the Quebec legislation would be in accord with that of the other provinces. He charged that the newsprint companies had not shown all the good faith they should have shown in the settlement of this question. The government for a long time had hesitated to adopt coercive measures towards the companies to force them to produce at a rate which, while not exorbitant, would enable them to secure face returns. The only thing left was to give the government or an appointed body authority to impose its will, with a penalty sufficiently strong to convince the newsprint manufacturers that they must cease the fight they had been waging among themselvees. The legislation it was proposed to introduce was not ready yet, as it was essential that matters be discussed with other provincial governments.

Maurice L. Duplessis, leader of the opposition, was not enthusiastic about the prospects of success from the government's efforts, and said the opposition did not intend to countenance or assist in legislation of a blackmailing, intimidating or unconstitutional nature. He remarked that the Minister had spoken of an understanding among the provinces, but such an understanding was impossible. In Ontario there were mills in far-off regions and the Government there was anxious to keep them operating. The only way to do so was to let them operate without too much control, and that meant overproduction. The same situation existed in New Brunswick, and in Nova Scotia there was a large mill erected to help ease the unemployment situation, and Nova Scotia would not be anxious to have that mill slow down. Even if there could be agreement in Canada, there was the Newfoundland situation, and in Anticosti Island, a freehold property, mills could be established free of Government control.

Then, again, there was the new situation in the Southern States, where trees had been found which would produce newsprint, and this was a situation more serious than commonly believed. The policy of the Government in launching defiance against everyone was of a nature to rouse our neighbors, and when our neighbors to the south were aroused they did not hesitate to spend millions to achieve their objective. It was not sound policy to rush forward and hurl challenges to those who furnished Quebec with markets.

Attitude of Newsprint Export Association

Charles Vining, president of the Newsprint Export Manufacturers' Association, in an address before the Empire Club here, said that while co-operation without compulsion among the newsprint manufacturers offered no hope of a dependable solution, he regarded control by legislation as a difficult and dangerous remedy.

"We shall be on safer ground," he said, "if we determine to find our solution along sound business and financial lines, supplemented if necessary by a helpful governmental attitude, but still a business solution rather than a governmental one."

Turning to a general survey of the industry, he said that in spite of the disruption caused by competitive obsession for tonnage and dangerous contracting methods, the newsprint industry during the last five years had brought to Canada from foreign customers a total of $472,000,000. This meant the employment of 75,000 men in the woods, 25,000 in the mills and many more in related industries. The investment of from $500,000,000 to $700,000,000 in the Canadian newsprint industry was the largest of the country's industrial investments with the exception of that in hydro-electrical power.

"It is a matter of simple arithmetic," he continued, "to demonstrate that a company would be better off with part capacity operation at a proper price than with full capacity at a low price, but this obsession has not been based on arithmetic. It has been based chiefly on fear and partly on hope. A man fears that his competi-

(Continued on page 24)

Wisconsin Mill Operations Hampered by Floods

Consolidated Water Power & Paper Co. Suffers Financial Loss Estimated at $42,000, Through Flooding of Properties at Wisconsin Rapids and Biron—Nekoosa-Edwards Mills at Nekoosa and Port Edwards Shut Down Temporarily—Little Damage at Rothschild

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., April 1, 1935—Operations of mills in the lower Wisconsin River Valley were seriously hampered for approximately three days last week by the washing out of spillways on some of the major power dams, and the flooding of property. The Consolidated Water Power and Paper Company at Wisconsin Rapids, Wis., bore the brunt of the wrath of the elements, with a financial loss estimated at $42,000.

Ice jams were largely responsible for the flood conditions. Part of the spillway at the Wisconsin Rapids dam was washed away first while a crew was dynamiting the ice jam. Before this could be accomplished, a powerful crush of ice carried away the flash boards and the spillways at the Consolidated dam at the Biron mill. An eight-foot wall of water went rushing down to Wisconsin Rapids, where the remainder of the spillways were carried away. The Consolidated mill at Wisconsin Rapids, and the company's office building were the center of a raging torrent for hours, with ice cakes two to three feet thick tearing away parts of the basements.

The Biron mill basement was inundated with eight feet of water, and the Wisconsin Rapids mill basement also was heavily flooded. The motors were soaked, and the mills were shut down for several days as a result. The Consolidated mill at Stevens Point also was shut down for a while, but the damage there was slight.

Water stood within three feet of the ceiling of the Consolidated office basement. Extensive files containing valuable records were damaged. Windows were broken and partitions smashed by the ice cakes. Approximately 100 tons of paper was ruined.

The estimate of $42,000 announced by Stanton W. Mead, treasurer of the Consolidated, included paper stocks ruined, damage to flash boards on dams, roads washed out, damage to machinery and numerous small items usually included with high water periods. The city of Wisconsin Rapids estimated its total loss at more than $100,000. One high tension power line was carried out.

The normal flow of the Wisconsin river is 1,500 to 3,000 cubic feet per second, but records kept by the Consolidated engineers showed the volume to have reached 75,000 cubic feet at the peak of the flood. Gates were opened wide on many of the upper dams by the Wisconsin Valley Improvement Company to protect them from being carried out. The company's reservoirs held a massive volume of water against the onrush. Flash boards were dynamited off at some points to meet the speed of the waters. Sand bags were thrown up for dikes at many points to keep the water from doing further damage.

Both the Nekoosa and Port Edwards mills of the Nekoosa-Edwards Paper Company were shut down when the basements were flooded and the motors soaked. Four machines were down at the Nekoosa mill and two at Port Edwards. Two others in a newer building of the Port Edwards unit were kept operating, because they were built on a higher level. The company estimates its loss at $5,000. The principal loss was at the Centralia dam, where one of the piers was washed out, and booms were carried away. Needles were inserted to divert water into the Port Edwards storage pool, and helped to save the dam. When warning of floods came, many of the motors were moved to safety until the waters receded. Production was practically at normal at the mills before the end of the week.

Marathon Paper Mills Company was obliged to shut down its pulp mill at Rothschild, Wis., temporarily because of high water in the mill race. Very little damage was reported there. Yards and roads at the Whiting-Plover Paper Company, Stevens Point, Wis., were flooded, but the mill was not affected.

Conditions such as these will be remedied to a great extent when the Wisconsin Valley Improvement Company completes its $15,000,000 storage reservoir project, financed by the Consolidated company. Tom Utegaard, engineer of the Consolidated, declared if the reservoirs to be constructed on the Big and Little Eau Pleine Rivers had been available, much of the water could have been held. Consent of the Wisconsin Public Service Commission is awaited so construction can be started.

News of the Industry

Acid-proof tile lining is being placed in one of the beaters and storage tanks of the Badger Paper Mills, Inc., Peshtigo, Wis. The contract has been awarded to the Queen City Marble and Tile Company. Several additional tanks already have been lined in this manner.

The last of a series of safety meetings for paper mill employees of Menasha, Wis., was held last week, with Fred Cobb, of Green Bay, Wis., as the speaker. His subject was "Present Day Safety Trends." Mr. Cobb's time for the last twenty years has been devoted to new developments in safety work. Frank J. Schneller, vice president of the Gilbert Paper Company, acted as chairman of the meeting.

Work of the Institute of Paper Chemistry, Appleton, Wis., was explained by Dr. John H. Graff, research associate, in an address last week before the Kiwanis club at Neenah, Wis. He described its meager beginnings, and its growth to world importance in research and experimentation for better and more efficient paper production.

The Fox River Paper Company, Appleton, Wis., holds the championship in the Industrial Basketball League of the Fox River Valley. Its team defeated the Tuttle Press, of Appleton, 32 to 29 in the final game of the title series.

Ralph J. Young, former general manager of the Minnesota-Ontario Pulp and Paper Company, International Falls, Minn., died March 23 at St. Paul, Minn. He was a native of Prescott, Wis., and was 65 years old. Burial was made at Minneapolis, Minn.

R. F. C. Loans to Paper Concerns

WASHINGTON, D. C., April 3, 1935—During the month of February the Reconstruction Finance Corporation loaned $25,000 to the Tarentum Paper Mills, Tarentum, Pa., at 6 per cent interest, according to announcement just made.

The corporation also loaned $70,000 to the Harding-Jones Paper Company, Middletown, Ohio, and $6,000 to the Ames Safety Envelope Company, Boston, Mass., during the same month.

Chicago Paper Market Continues Fairly Active

Conditions In Fine Paper Section Satisfactory—Book, Cover, Bond, Writing and Ledger Papers In Good Request—Demand for Various Grades of Coarse Paper Irregular—Improved Outlook for Ground Wood Papers—Paper Stock Relatively Quiet

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., April 1, 1935—The tendency of some manufacturers to slow up production in the expectancy that the NRA will cease to operate in June and thus permit them to produce at lower costs, is not particularly marked in the paper industry, where there is evident belief that even if the NRA is not retained other legislation will be enacted to make the production costs equally high. Chicago mill representatives reported a fair volume of business, with writings reported as especially good. The jobbing fraternity in Chicago found things a bit slower, particularly in the kraft market, where, while mill men reported things fairly good, the jobbers found the going a bit rough.

Book and cover papers are said to be fair, while sulphites seem to be going along in a satisfactory trend. Flood conditions in the Wisconsin territory have had their influence on certain grades of paper. Bonds and ledgers experienced a good week as far as mill demand was concerned with local retail sales not quite so strong. Ground woods were a bit brightened by continued efforts to straighten out the newsprint situation. Paper board was said to be only fair. The waste market was relatively quiet, the mill stocks evidently being ample and not conducive to any marked improvement in the near future.

J. H. Coy, Jr., Advanced

Chicago paper merchants, and particularly mill representatives, are pleased over the advancement accorded to J. H. Coy, Jr., who left last week to locate in Philadelphia. Mr. Coy will headquarter in that city and cover an important part of the Eastern territory for the Cherry River Paper Company, with which he has been identified since last May. The territory in the East, including Washington, Pittsburgh, Richmond, parts of New York State, Buffalo and other trade centers, is exceedingly well established, according to Joe Heyer, Chicago sales manager of the Cherry River organization, and he adds that the transfer is a distinct advancement to Mr. Coy, who has made a good sales record since his identification with Cherry River's Chicago office. Mr. Coy, the son of Jim Coy, vice president of Flambeau, was with the Eastern Manufacturing Company's Chicago offices for a considerable period of time prior to his Cherry River connection. His many friends are predicting that he will immediately make his presence felt in Eastern sales circles. Mr. Heyer states that arrangements have been completed for a successor to Mr. Coy in the Chicago sales office and that an announcement to this effect may be expected shortly.

Paper Salesmen's Activities

The Midwest Division of the Salesmen's Association of the Paper Industry spent a good part of its regular Monday, March 25, meeting, discussing a number of recommendations covering trade customs within the industry. Members of the association also listened to Ben Babbitt, newly elected golf chairman, as he outlined the plans for the golf season and announced some of the courses already selected for the monthly tournaments. R. C. Johnson, manager of the Chicago district sales office of the Northwest Paper Company, is the newly elected vice president. Mr. Johnson's company, incidentally, recently moved its general sales offices from South Michigan Boulevard back to Cloquet, Minnesota, leaving the SAPEYE leader in complete charge of Chicago sales development.

Paper Mill Earnings Up

The paper industry in the Seventh Federal Reserve District gave a good account of itself in the report of March 26 covering statistics for the week of February 15, although the improvements noted were not on a par with those of the majority of the industries listed. For the week ending February 15 the paper and printing industry in Illinois, Wisconsin, Michigan, Indiana and Iowa showed 487 reporting firms and 60,591 wage earners. Earnings totaled $1,480,000, an increase of 1.1 per cent over January 15. The number of wage earners was up 1.3 per cent. This compares to an increase of 6.0 per cent in wage earners and of 11.3 per cent in earnings for the total group of 10 in the industrial section.

The Chicago paper industry has its eye on the Illinois legislature which convenes again on April 3 and which, with the elections over, is expected to jump into the job of raising $3,000,000 a month for relief purposes. Three of the suggested methods would strike directly home to the paper industry in Illinois. One bill proposes an increase of 1 cent in the gas tax, directly affecting delivery costs for many concerns. Another proposes to increase the Occupational tax to 3 per cent and to greatly strengthen its enforcement. This is an obvious increased burden to all lines coming under the provisions of the Act. A third bill proposes to broaden the base of the Occupational tax to cover more than 112 occupations and the paper executives are going to have a hard time getting around this one if it passes. Paper trade groups and individuals identified with the various local and state trade associations are carefully watching the progress of this legislation, as well as "social legislation" referring to unemployment insurance, old age pensions, minimum wages, work hours, prevailing wages, etc.

Unique Link-Belt Exhibit

The Link-Belt Company, well known suppliers to the paper mills of the country, has cooperated in many ways to equip the big Museum of Science and Industry on Chicago's south side. One of the evidences of cooperation is an exhibit of illumination equipment where, by means of a neon tube, an entire testing laboratory may be flooded with light flashes whose frequency is controlled electrically. A room of the Museum, 500 square feet of floor space, is equipped to demonstrate the characteristic motions of fan blades, link belts, sprockets, etc. A part of the equipment in the coal exhibits also comes from Link-Belt factories. Incidentally, the sponsors of the Museum which was made possible by Julius Rosenwald, hope to include complete equipment showing the manufacture of paper.

News of the Trade

The Mid-States Gummed Paper Company of Chicago is using an attractive new series of labels in its own business which indicate that the "practice what you preach" theory is not being overlooked by the Chicago concern. The labels are designed to advertise "Really Flat" Gummed Papers and there are three sets of the labels to put the story over to the consumer industry.

Demand for Paper Moderately Active In Boston

Fine Paper Market Conditions Reported Fair to Good—Demand for Wrapping Paper Improving—Box Board In Normal Request for Time of Year—Mixed Waste Paper Quotations Decline, Due to Greater Activity In Container Manilas

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., April 1, 1935—Business in the wholesale paper market here was fair to good, taken by and large, during the last week. At one prominent house it was intimated that sales of fine paper had fallen off a little for March, while at another it was stated that the month was pretty good. At another fine paper house it was stated that business was good and that they felt very much encouraged. The demand for wrapping paper improved. Spring items, such as package napkins, decorated papers and hat bags for the Easter trade are in the hands of salesmen. Business in converting papers was very good. Box boards were in about normal demand for shoe box purposes.

Under old papers, a heavy demand has arisen for container manilas, shipments of towards thirty cars being made to Philadelphia at $5.00 a ton f. o. b. Boston. Container manilas are not ordinarily shipped in any quantity from Boston, but a mill in Philadelphia preferred this grade to mixed papers, previously purchased. The grade is a "glorified mixed paper," consisting of manila and other strong papers, with news and box board papers eliminated. The call for container manilas has resulted in a decline in the price of the regular grade of mixed papers, which were quoted at .17½ @ .20, compared with a previous flat .20. There was less call for screening wrappers, with a consequent decline to .40 @ .45 from .45 @ .55. In bagging, gunny was stronger and more active. Mixed strings advanced to .30 @ .35 from a former quotation of .25 @ .30. Under old domestic rags, there was a good market for roofing rags, which remained steady at the same prices as previously.

News of the Trade

Knight, Allen & Clark, Inc., have just issued a comprehensive and attractive new price list, of ninety pages, including all lines carried by this company. The covers are of Russet American Embossed Cover, and the leaves of Substance 20, Acceptance Bond.

This company is stocking a full line of all the Eagle-A typewriter papers, manufactured by the American Writing Paper Company.

George D. Allen, vice-president and treasurer of Knight, Allen & Clark, Inc., is improving from his recent illness, but is still confined to the hospital.

Carter, Rice & Co., Corp., have recently been appointed exclusive distributors in Metropolitan Boston of Corroflex, the new cushion wrapper, developed by the Sherman Paper Products Corporation, of Newton Upper Falls, Mass. Streeter Bush, of the wrapping paper department of Carter, Rice & Co., feels that there are unusual opportunities for this unusual sheet.

Charles A. Esty, president of Carter, Rice & Co., has gone on a business trip to the Coast divisions of the company in San Francisco, Portland and Seattle.

Frank B. Cummings, executive secretary of the New England Paper Merchants Association, has gone to Florida on a vacation, accompanied by H. A. Moses, president of the Strathmore Paper Company, West Springfield, Mass.

Winthrop L. Carter, president and general manager of the Nashua Gummed and Coated Paper Company, Nashua, N. H., and Mrs. Carter gave a luncheon in honor of Governor H. Styles Bridges of New Hampshire at their Chestnut Hill home. Governor Bridges, with his official party, was guest speaker of the Massachusetts Horticultural Society at the flower show in Mechanics Building.

Miss Nancy Allen, daughter of Philip R. Allen, president of Bird & Son, Inc., East Walpole, Mass., and Mrs. Allen, is to be married June 1 to William Palmer Conklin, Jr., son of William Palmer Conklin, of Hartford, Conn. The ceremony will take place at "Spring Brook Farm," the home of Miss Allen's parents in Walpole.

Arthur Herman, dealer in wood pulp for the paper trade, New York City, called on the trade last week.

Philemon Creek Paper Co. Reorganizes

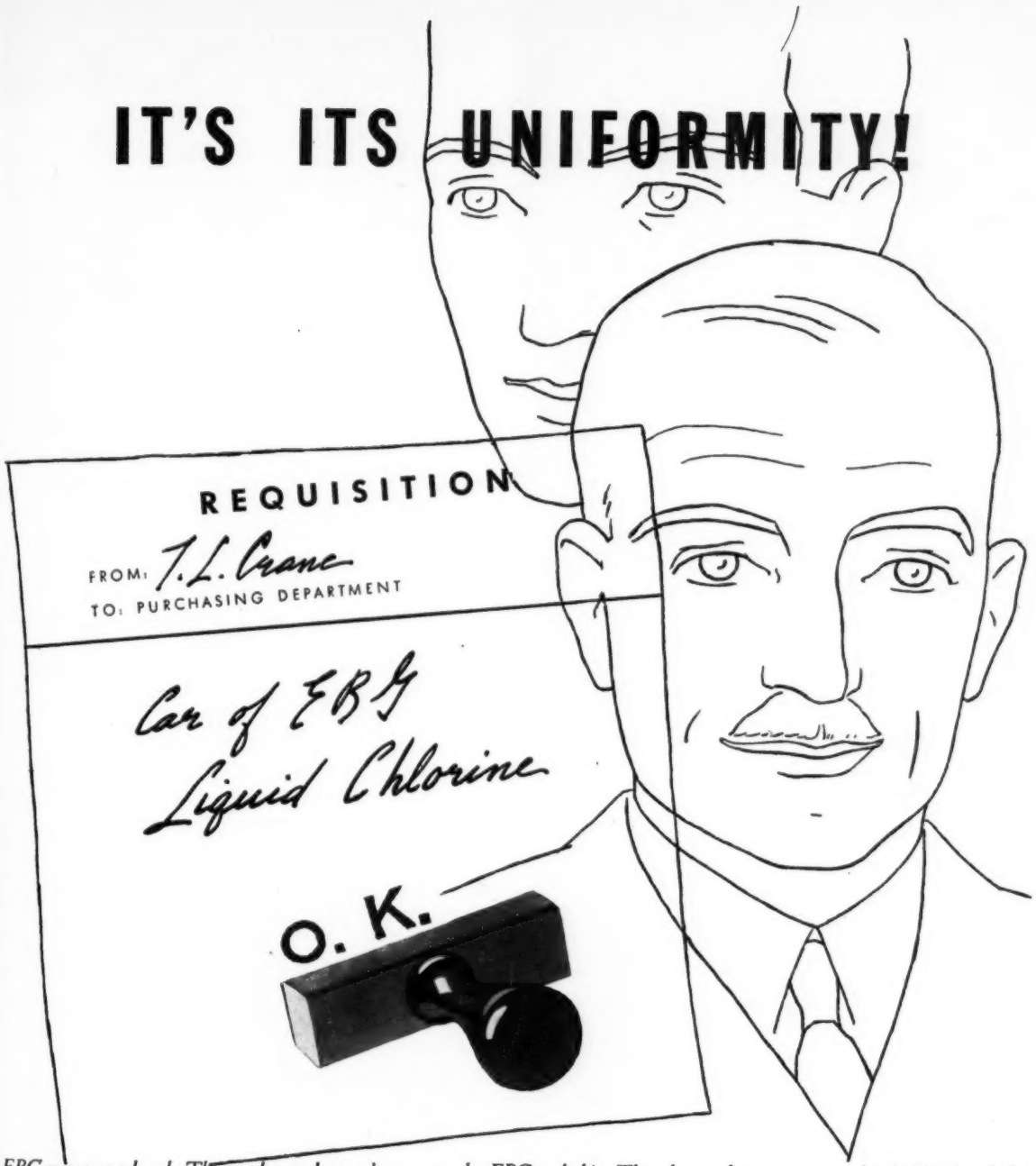
BROWNVILLE, N. Y., April 1, 1935—A reorganization of the Philemon Creek Paper Company has been effected and the sale of a large amount of stock has provided sufficient working capital to resume operations immediately. New directors under the reorganization include Frank A. Augsbury, of the Algonquin Paper Company, Henry E. Smith, for many years superintendent of the Malone Paper Company, and Wallace G. Phillips, chief engineer of the latter concern. F. L. Pinckney has been chosen treasurer and Earl A. Fetterley, formerly with the Carthage plant of the National Paper Products Company, is the new secretary and assistant treasurer. C. R. Outterson will continue as president. It was stated that more than 80 per cent of the stock issue has already been subscribed and the Company intends to use a patented process of manufacturing paper from drinking cup ends and other waxed stock high in sulphite ingredients. The product is adapted for various purposes including a waterproof lining for multiwall bags used for commodities which must be kept dry.

The Company is capable of producing 15 tons of paper per machine on a schedule of 24 hours and an official claim that the demand will allow operations six days weekly. Employment will be provided to 105 hands with both machines in operation. Charles L. Outterson, president, has been prominent in business circles having been connected with the old Carthage Sulphite Pulp and Paper Company for several years. He was also founder of the Adirondack Mineral Company which was absorbed by the Papermakers Chemical Corporation. For some time he also served as manager of the paper chemical department of the Arabol Manufacturing Company, of New York.

Liquid Chlorine

Solvay Sales Corporation, 40 Rector street, New York, has just issued an exceedingly interesting booklet on Liquid Chlorine. This is probably one of the most outstanding publications of its kind that has ever been issued covering this particular subject and it cannot fail to be of great value to anyone interested in this commodity. A free copy of the book may be obtained by writing to the Solvay Sales Corporation at the address mentioned.

IT'S ITS UNIFORMITY!



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EBG Liquid Chlorine

FIRST IN THE COUNTRY

Philadelphia Paper Market Conditions Spotty

Demand for Various Standard Grades of Paper Falls Off Perceptibly—While Paper Mill Quotations Are Well Sustained At Formerly Quoted Levels, Manufacturing Operations Are Generally Proceeding On Restricted Schedules

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., April 1, 1935—Paper distributors of Philadelphia and vicinity have experienced a distinct let-down this past week. Reports, generally speaking, showed little variation of this state of affairs. On one side, the statement is made that business is spotty; mills are not reducing prices but are operating on restricted basis—not much paper coming into the market for immediate needs. Some days there is quite a volume of business, but in the main it has fallen far below normal. From another source it was learned that business in both branches is worse than spotty—it is flat. On the other hand, it was said that business is fair to good.

Century Old Paper Mills to Exhibit

One hundred Century-old companies have been invited to show their products in "Philadelphia on Parade." What is known as an "Avenue of Progress" with 100 one-hundred-year-old Philadelphia firms and business organizations participating in a combined display of their products will be one of the big features of "Philadelphia on Parade," the civic, cultural and business exposition scheduled to open in Philadelphia's Convention Center May 9.

Col. Louis J. Kolb is quoted as saying—"If we are to accomplish the purposes of "Philadelphia on Parade," in re-impressing on Philadelphians the grandeur and importance of our city, the exposition must have the representation of the 100-year-old organizations that Philadelphia loves to honor. The perseverance, initiative and success of these firms will be a real inspiration."

Those representing the paper trade in these Century-Old Companies are Dill & Collins, Inc., established in 1702, Shyrock Bros., established in 1791 and McDowell Paper Mills, established in 1828. These ancient and honorable organizations will exhibit their products in the making. Norbert H. Considine, president of Philadelphia Paper Trade Association and Paper House of Pennsylvania, has been appointed to serve on the committee, which will have charge of this exposition portraying all the activities of this great metropolis.

Announcement Papers Discussed

The Announcement Department of Garrett-Buchanan Company recently held a meeting and dinner at the Downtown Club. During the meeting there was a very interesting discussion of the new announcement books put out by the Kent Paper Company in conjunction with the Eagle A Announcement papers. The book was received with a great deal of enthusiasm.

Charles Morris, president of the Eagle A Announcement Association, who is connected with the J. E. Linde Paper Company, New York, spoke on conditions in the Announcement field. James Sweet of American Writing, gave a talk on the trend of the paper business and how Announcements have influenced that trend toward the buying of better papers. John Voltmann, of the Kent Paper Company gave a lengthy discourse on the "Ten Star Line" of Eagle A Announcement Papers, using mounted displays for his talk.

Morgan H. Thomas, president of Garrett-Buchanan Company, spoke on the advances made in the paper mills and converters have been to the salesmen with the wonderful specimens of printed matter, and the various sizes and colors of sheets with envelopes to match, making it a real pleasure to sell high class Announcements.

Charles Corey of the Garrett-Buchanan Company, gave a resume on conditions in the Announcement field in Philadelphia today. Harry Fleming, manager of the department, acted as toastmaster.

News of the Trade

The Hooper Paper and Twine Company has been appointed distributor of the Ta-Nom-Kamimeo bond made by Badger Paper Mills in Peshtigo, Wisconsin. This comes in white and five colors.

This company now handles the full line of bond, copirite glazed manifold and Ta-Nom-Ka bond, comprising white and ten colors as well as natural hand-made and white ripple finish.

Over the signature of the Thos. W. Price Company comes the following announcement. "We wish to announce that David H. Thomas, who has been with this concern for the past thirty-five years, is retiring from the active field. During this time he has faithfully performed his duties and made many friends in the trade. It is amongst these friends in the trade who were accustomed to his periodic calls that he will be greatly missed, but it can be reasonably expected that although he will no longer be actively engaged in the paper business, we shall occasionally be afforded the opportunity to discuss with him the 'good old days'."

Gummed Products Co. Improvements

DAYTON, Ohio, April 1, 1935—Satisfactory progress is reported to have been made the past week on the new plant of the Gummed Products Company, at Troy, near here. Approximately $250,000 is being expended on improvements at the plant, located at the intersection of Union, West and Long streets.

When completed, these improvements will make the Troy concern one of the largest of its kind in the country. The Company had a comparatively small beginning and the record achieved thus far has been one worthy of commendation. The firm manufactures gummed paper tape and allied paper specialties.

The improvements include a new one-story mill, covering 50,000 square feet of floor space and a power house, the cost of which will be about $200,000. The additional $50,000 anticipated expense is due to the decision of the Company to build a new office, rather than transfer the present one as was originally intended.

Work on the excavation and foundations has advanced to the point where it was deemed advisable to award additional contracts, the building and construction details having been arranged some time ago.

Virtually all of the miscellaneous contracts have been awarded. The only one coming to this city was that given the H. J. Osterfeld Company, for plumbing and heating, always an important feature of construction. Stokers, boilers, electrical work, elevator equipment, etc. will be installed by reputable firms, with Pittsburgh, Louisville and Cincinnati being represented in the awards.

Paper and Pulp Exports of the United States

For Dec. and for the Twelve Months Ending Dec. 31, 1934 and 1933

PAPER EXPORTS

Articles	December, 1934 Quantity	December, 1934 Dollars	Twelve Months, Ending December, 1934 Quantity	Twelve Months, Ending December, 1934 Dollars
PAPER AND MANUFACTURES	.....	1,520,371	.....	18,877,850
Printing paper—				
News print paper.....lbs.	5,216,732	99,745	46,855,378	977,341
Book paper, not coated..lbs.	1,602,637	88,614	16,974,612	911,024
Cover paper.....lbs.	67,781	9,879	948,388	132,887
Greaseproof and waterproof paper .....lbs.	431,274	72,593	4,691,436	881,936
Overissue and old newspapers .....lbs.	17,523,333	121,490	188,304,729	1,581,370
Wrapping paper.....lbs.	3,369,858	143,509	46,169,444	1,957,283
Surface-coated paper.....lbs.	445,689	49,910	7,157,076	776,134
Tissue and crepe paper....lbs.	303,495	32,667	4,802,569	631,536
Toilet paper.....lbs.	611,529	52,251	7,411,241	599,605
Paper towels and napkins..lbs.	244,225	23,117	2,347,550	227,767
Boxboard (paper board and strawboard) .....lbs.	5,006,893	71,960	46,886,422	952,209
Bristols and bristol board..lbs.	166,901	11,853	1,963,401	130,370
Other paper board.....lbs.	2,764,495	83,314	21,112,154	800,428
Sheathing and building paper .....lbs.	546,710	16,257	7,769,904	220,174
Fiber insulating board or bat .....sq. ft.	2,451,777	72,578	34,039,019	981,534
Wall board of paper or pulp .....sq. ft.	1,298,820	30,586	10,119,296	276,490
Blotting paper.....lbs.	153,696	16,473	1,876,637	184,980
Filing folders, index cards, and other office forms.....lbs.	80,786	26,135	872,976	304,174
Papeteries (fancy writing paper) .....lbs.	21,906	4,957	186,450	45,217
Other writing paper.....lbs.	1,760,292	110,752	18,513,617	1,264,961
Paper hangings (wall paper) .....roll	104,945	7,261	800,458	89,465
Paper bags.....lbs.	1,346,972	69,569	13,457,080	744,289
Boxes and cartons.....lbs.	557,249	47,313	9,763,493	633,576
Envelopes .....lbs.	71,071	12,792	877,449	146,362
Vulcanized fiber sheets, strips, rods, and tubes.....lbs.	221,171	60,138	3,546,066	951,159
Cash-register and adding-machine paper.....lbs.	207,178	14,312	3,196,172	246,298
Other paper and paper products	.....	170,346	.....	2,229,281

PAPER EXPORTS

Articles	December, 1933 Quantity	December, 1933 Dollars	Twelve Months, Ending December, 1933 Quantity	Twelve Months, Ending December, 1933 Dollars
PAPER AND MANUFACTURES	.....	1,631,086	.....	14,599,007
Printing paper—				
News print paper.....lbs.	4,619,680	96,964	22,296,879	456,808
Book paper, not coated..lbs.	1,743,555	82,679	18,382,509	862,848
Cover paper.....lbs.	64,170	7,670	823,732	103,688
Grease proof and waterproof paper .....lbs.	333,720	62,066	4,717,517	763,129
Overissue and old newspapers .....lbs.	23,217,751	207,569	143,607,766	1,059,738
Wrapping paper.....lbs.	2,776,959	138,282	24,373,666	1,249,810
Surface-coated paper.....lbs.	387,376	74,034	6,130,350	617,219
Tissue and crepe paper....lbs.	353,501	43,271	3,815,430	544,164
Toilet paper.....lbs.	664,204	53,284	6,636,325	534,450
Paper towels and napkins..lbs.	84,871	10,263	1,601,396	137,352
Box board (paper board and strawboard) .....lbs.	5,613,657	138,610	44,632,705	946,289
Bristols and bristol board.lbs.	84,788	8,096	1,333,946	90,116
Other paper board.....lbs.	2,183,693	62,606	18,927,779	663,099
Sheathing and building paper .....lbs.	632,614	17,606	7,215,510	176,642
Fiber insulating board or bat .....sq. ft.	2,848,432	82,352	32,985,083	852,261
Wall board of paper or pulp .....sq. ft.	1,621,012	37,477	9,826,006	243,172
Blotting paper.....lbs.	146,430	14,635	1,583,377	148,162
Filing folders, index cards, and other office forms.....lbs.	65,600	21,839	843,449	271,715
Papeteries (fancy writing paper) .....lbs.	9,712	3,446	128,088	28,794
Other writing paper.....lbs.	1,137,606	80,935	13,526,825	884,430
Paper hangings (wall paper) .....rolls	87,995	5,806	781,375	64,141
Paper bags.....lbs.	937,746	49,449	10,917,815	529,522
Boxes and cartons.....lbs.	405,670	31,043	6,929,100	443,734
Envelopes .....lbs.	87,743	12,934	921,438	128,882
Vulcanized fiber sheets, strips, rods, and tubes.....lbs.	375,649	97,148	2,801,358	726,727
Cash-register and adding-machine paper.....lbs.	292,341	23,502	2,570,663	202,593
Other paper and paper products	.....	167,520	.....	1,869,522

PAPER BASE STOCK EXPORTS

Articles	December, 1934 Quantity	December, 1934 Dollars	Twelve Months, Ending December, 1934 Quantity	Twelve Months, Ending December, 1934 Dollars
PAPER BASE STOCKS	.....	906,877	.....	8,149,576
Pulpwoods .....cords	4,304	26,288	12,104	66,458
Wood pulp:				
Sulphite wood pulp.....tons	14,808	769,679	124,348	6,815,640
Soda wood pulp.....tons	25	1,390	1,196	69,228
Other wood pulp.....tons	405	18,100	2,073	120,691
Rags and other paper stock.lbs.	8,745,950	91,420	107,527,402	1,077,559

PAPER BASE STOCK EXPORTS

Articles	December, 1933 Quantity	December, 1933 Dollars	Twelve Months, Ending December, 1933 Quantity	Twelve Months, Ending December, 1933 Dollars
PAPER BASE STOCKS	.....	501,906	.....	3,861,967
Pulpwoods .....cords	.....	.....	10,737	68,322
Wood pulp—				
Sulphite wood pulp....tons	8,103	400,050	68,897	3,048,542
Soda wood pulp.....tons	98	6,339	680	33,883
Other wood pulp.....tons	366	5,155	1,130	31,458
Rags and other paper stock.lbs.	6,935,826	90,362	74,504,798	679,762

Bids and Awards for Government Papers

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 3, 1935—The Government Printing Office has received bids for 20,000 sheets of lemon railroad board at $26.54 per M sheets from the following: Whitaker Paper Company, Old Dominion Paper Company, Reese & Reese, Inc., Dobler & Mudge, Barton, Duer & Koch Paper Company, and Baldwin Paper Company.

The Printing Office has announced the following paper awards: Barton, Duer & Koch Paper Company will furnish 4,950 pounds (25,000 sheets) of 32 x 42, buff English finish book paper at 5.65 cents per pound, bids for which were received on March 19.

The same firm will also furnish 20,000 pounds of yellow calendered tag board in 23¼ inch rolls at 7.75 cents per pound. The Mathers-Lamm Paper Company will furnish 500 pounds of facing stereo tissue paper at 75 cents per pound. Bids for these items were received on March 15.

J. W. Butler Paper Company will furnish 3,015 pounds of 28 x 41 white lithograph finish paper at 5.75 cents per pound, bids for which were received on March 8.

Barton, Duer & Koch Paper Company will furnish 56,430 pounds (285,000 sheets) of 32 x 42 buff or India tint English finish book paper at 5.4 cents per pound. The R. P. Andrews Paper Company will furnish 11,830 pounds (65,000 sheets) of 22 x 33, 50 per cent rag green laid cover paper at 13.09 cents per pound. Bids for both of these items were received on March 23.

The Whitaker Paper Company will furnish 20,000 sheets of 22 x 28 lemon railroad board at $26.54 per M sheets, bids for which were received on March 22.

The Old Dominion Paper Company will furnish 72,000 pounds of 28 x 40, No. 80 white sulphite ledger paper at 6.54 cents per pound.

Finnish Timber and Paper Calendar

The Fifth Edition of that invaluable directory, the Finnish Timber and Paper Calendar, has just been published. Of particular interest to the paper industry is the section devoted to the paper, mechanical wood pulp, cardboard and wallboard mills, and cellulose.

Another interesting section describes the Finnish fleet of ice-breakers. In this section also appears an interesting review of the country's cellulose, paper and mechanical wood pulp mills, according to the products made in these various plants.

The price of the Paper Calendar is twelve shillings, free of postage. It may be obtained from "The Finnish Timber and Paper Calendar," S. Esplanadgat 2, Helsingfors, Finland.

Paper and Pulp Imports of the United States

For Dec. and for the Twelve Months Ending Dec. 31, 1934 and 1933

PAPER IMPORTS

Articles	December, 1934 Quantity	December, 1934 Dollars	Twelve Months, Ending December, 1934 Quantity	Twelve Months, Ending December, 1934 Dollars
PAPER AND MANUFACTURES	.....	8,307,866	.....	86,518,680
Printing paper—				
Standard news print, free	445,794	7,582,297	4,419,396	76,271,527
Other, n.e.s., dut. lbs.	703,952	15,207	7,799,950	167,897
Grease and waterproof, dut. lbs.	36,373	6,849	346,231	78,232
Kraft wrapping, dut. lbs.	670,284	23,767	8,052,950	297,909
Other wrapping, dut. lbs.	13,558	1,250	1,602,658	59,417
Writing and drawing, dut. lbs.	105,276	24,014	1,635,370	359,524
Paper and envelope combinations, dut.	.....	1,133	.....	23,633
Surfaced-coated, dut. lbs.	104,802	39,223	1,634,656	612,465
Uncoated, decorated, embossed, dut. lbs.	4,110	930	26,718	10,091
Tissue and similar paper:				
Not over 6 pounds to the ream, dut. lbs.	96,657	52,637	1,091,594	534,790
Other, dut. lbs.	30,215	13,528	507,263	224,457
Pulpboard, in rolls, dut. lbs.	1,403,806	24,871	18,184,482	317,627
Paper board, pulpboard, n.e.s., and cardboard, dut. lbs.	1,384,461	21,611	15,594,084	269,854
Leatherboard, test, and wallboard, dut. lbs.	1,616,661	46,033	7,219,306	239,952
Cigarette paper, books and covers, dut. lbs.	936,181	247,579	15,774,318	4,122,578
Hanging paper (wallpaper), dut. lbs.	50,003	14,498	248,274	95,286
Duplex, decalcomania, not printed, free lbs.	31,884	6,963	441,903	94,381
Paper boxes, dut.	.....	37,186	.....	634,460
Papier mâché and pulp manufactures, dut. lbs.	.....	15,723	.....	341,245
Other paper and manufactures, dut.	.....	132,567	.....	1,763,355

PAPER IMPORTS

Articles	December, 1933 Quantity	December, 1933 Dollars	Twelve Months, Ending December, 1933 Quantity	Twelve Months, Ending December, 1933 Dollars
PAPER AND MANUFACTURES	.....	7,081,375	.....	77,446,538
Printing paper—				
Standard news print, free	337,574	5,961,877	3,587,082	68,494,657
All other, n.e.s., dut. lbs.	322,099	6,174	4,188,821	89,377
Greaseproof and waterproof paper, dut. lbs.	59,851	7,397	617,625	82,649
Kraft wrapping paper, dut. lbs.	593,620	21,864	8,317,553	275,566
Other wrapping paper, dut. lbs.	90,837	2,999	1,746,249	65,663
Writing and drawing paper, dut. lbs.	164,778	30,165	1,606,957	273,443
Paper and envelope combinations, dut.	.....	1,146	.....	34,075
Surface-coated paper, dut. lbs.	96,584	43,651	1,252,403	464,459
Uncoated, decorated, embossed, dut. lbs.	1,712	1,060	26,124	7,961
Tissue and similar paper:				
Not over 6 pounds to the ream, dut. lbs.	105,258	49,385	1,131,665	450,705
Other, dut. lbs.	38,740	15,062	439,367	164,003
Paper boards, n. e. s.—				
Pulp board in rolls, dut. lbs.	326,612	7,219	12,580,717	218,375
Paper board, pulp board, n.e.s., and cardboard, dut. lbs.	934,628	16,496	13,682,817	229,692
Leather board, test, and wall board, dut. lbs.	3,195,570	57,369	11,899,775	368,768
Cigarette paper, books, and covers, dut. lbs.	2,295,536	611,800	15,349,475	3,426,325
Hanging paper (wallpaper), dut. lbs.	26,097	6,891	243,473	71,730
Duplex, decalcomania, not printed, free lbs.	18,538	4,152	374,142	71,441
Paper boxes, dut.	.....	23,672	.....	403,309
Papier mâché and pulp manufactures, dut.	.....	33,854	.....	365,523
Other paper and manufactures, dut.	.....	179,142	.....	1,888,823

PAPER BASE STOCK IMPORTS

Articles	December, 1934 Quantity	December, 1934 Dollars	Twelve Months, Ending December, 1934 Quantity	Twelve Months, Ending December, 1934 Dollars
PAPER BASE STOCKS	.....	5,733,981	.....	71,209,410
Pulpwood cords	42,192	257,951	971,190	7,322,856
Rough:				
Spruce, free cords	1,291	10,296	168,974	1,232,400
Other, free cords	.....	.....	15,643	85,140
Peeled:				
Spruce, free cords	30,254	201,357	668,424	5,359,726
Other, free cords	10,626	46,161	113,412	610,569
Rossed:				
Spruce, free cords	21	137	4,737	35,021
Wood and other pulp:				
Mechanically ground wood pulp:				
Unbleached, free tons	15,597	316,994	159,331	3,020,850
Bleached, free tons	430	9,670	9,753	224,200
Sulphite wood pulp:				
Unbleached, free tons	54,037	2,050,812	603,117	2,179,584
Bleached, free tons	22,843	1,281,448	355,484	19,415,304
Sulphate, wood pulp:				
Unbleached (Kraft), free tons	42,022	1,393,147	429,853	13,773,776
Bleached, free tons	4,734	314,919	48,275	3,334,713
Soda pulp, free tons	706	31,317	6,665	304,660
Other pulp, free tons	5	1,041	137	25,182
Rags for paper stock, free lbs.	4,680,671	39,156	101,523,797	1,282,668
All other paper stock, free lbs.	3,371,387	37,526	52,524,939	753,617

PAPER BASE STOCK IMPORTS

Articles	December, 1933 Quantity	December, 1933 Dollars	Twelve Months, Ending December, 1933 Quantity	Twelve Months, Ending December, 1933 Dollars
PAPER BASE STOCKS	.....	6,016,520	.....	65,329,100
Pulpwoods cords	34,284	216,265	723,208	5,362,335
Rough:				
Spruce, free cords	466	2,024	119,227	899,739
Other, free cords	.....	.....	625	3,200
Peeled:				
Spruce, free cords	28,606	190,660	491,947	3,801,323
Other, free cords	4,877	21,846	99,865	585,477
Rossed:				
Spruce, free cords	335	1,735	11,544	72,596
Wood and other pulp:				
Mechanically ground wood pulp:				
Unbleached, free tons	13,381	230,196	176,869	3,031,488
Bleached, free tons	854	16,350	10,881	138,431
Sulphite wood pulp:				
Unbleached, free tons	63,341	2,109,422	643,003	19,946,124
Bleached, free tons	37,302	1,919,932	400,633	19,138,468
Sulphate wood pulp:				
Unbleached (Kraft), free tons	38,082	1,080,013	461,980	12,568,367
Bleached, free tons	2,618	165,560	36,622	2,361,882
Soda pulp, free tons	392	18,607	3,568	139,245
Other pulp, free tons	.....	.....	188	30,005
Rags for paper stock, free lbs.	11,926,538	149,415	171,503,795	1,413,830
All other paper stock, free lbs.	7,751,567	110,760	105,046,100	1,153,925

Indianapolis Demand Increases

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., April 1, 1935—With definite assurance that spring has arrived, the paper trade is showing more signs of life. Each week during the last four there has been a small, but very definite increase in business. Also there has been an increase in volume of inquiries that certainly will lead to business. The very steadiness that is apparent in most lines is indicative of better times to come. Some of the trade's leaders say, however, that much depends on legislation in the national congress.

Perhaps the brightest spot on the horizon now is the future for building papers, which have gone begging for four years. Jobbers say retail demand has increased gradually since the first of the year and with the coming of proper building weather there will be a great gain in business. Jobbers of heavy papers say there is a continued demand from the automobile industry, particularly, and also from the building trades.

Box makers are doing a good business just now. Again the automobile trade, the accessory division, is a big customer. Hosiery manufacturers and candy makers also are buying more readily than usual at this time of the year. An increase in demand for cartons for the ice cream trade also is noticed, coming a trifle earlier than it did last year. Some inquiries are being received for summer specialties but actual demand has not opened.

CANADIAN NEWSPRINT SITUATION CONTINUES INVOLVED

(Continued from page 15)

tors are going to cut the price and he decides that he had better secure more business even if he has to cut the price first himself. Or a man hopes that, if he can manage to keep all his tonnage, some miracle may occur to increase the price and he may thus be in the happy position of having his tonnage and a better price as well.

"Taking human nature into account this is an understandable policy but it has been a costly one for all concerned for it has led to repeated price-cutting and to such wide variations in the positions of different companies, such extremes between 'longs' and 'shorts,' that there has been no possibility of stability. Last year the industry as a whole operated at 67 per cent of its total capacity, a very good average compared with other industries. But, while the average was 67 per cent, there were and still are some long companies with their mills filled to 85 or even 100 per cent of capacity and some short companies at only 40 or 50 per cent. In that disproportion of business, that evil result of excess capacity plus human nature, we have all the elements of continued trouble."

Another source of trouble was the contract method based on the theory that all companies should sell at the same price, which worked out to mean that any company which cut the price set the price for the whole industry. He remarked that Canada was using up its timber lands at a prodigious rate. A single issue of the *New York Times*, for example, consumed 38 acres of timber. The daily papers of New York and Chicago alone in one day consumed 480 acres. The 2,600,000 tons Canada sold last year represent over 1,000 square miles of forest, an area 100 miles long by 10 miles wide. With this rate of consumption and without proper replacement it would not be many years before the Canadian industry was incapable of making low-cost newsprint whether it wants to or not. That is a danger for the publisher as well as the manufacturer to ponder upon. In the meantime, Canadians were consuming their forest and obtaining virtually no return upon the hundreds of millions of real money invested in the industry.

Reply to Mr. Coffin's Criticism

The President of the Newsprint Export Manufacturers' Association, in an interview, replied to a criticism of J. D. Coffin, of the Hearst newspapers, who recently gave out a statement to the effect that Great Britain had doubled the productive capacity of its newsprint mills since 1926, but had managed to secure a satisfactory return on the capital investment. Mr. Coffin compared this with the situation of the newsprint industry in Canada, to the disadvantage of the latter.

Replying to this, Mr. Vining said that the price received by the English manufacturer was considerably above the price obtained by the Canadian manufacturer, working out at $7.67 per ton net higher. Furthermore the English manufacturer obtains his pulp at low prices from Scandinavian countries where the wage rate for common labor in the mills is 7½c per hour compared with a rate six times as high in Canadian mills.

Freight Rates on Pulpwood

The Quebec Legislative Assembly, by unanimous resolution, has decided to approach the railway companies and the Railway Commission of Canada to secure a reduction of freight rates on pulpwood, either for transportation outside the province or for transportation between different points in the province. Last year the Railway Commission made a sharp reduction in rates on wood from the Pacific Coast to the provinces of Ontario and Quebec, and the feeling was that similar reductions should be granted generally.

Newsprint Prices

A number of Canadian companies have notified their customers that the $40 per ton price of newsprint will be continued to the end of the second quarter of the year. Thus there is no change in the situation whereby certain contracts prevented the endeavors of the industry to secure an advance of $2.50 per ton for the first half of 1935 and a further $2.50 increase for the last half, to compensate for higher production costs.

Wage Rates Fixed in Paper Industry

A notice in the current issue of the *Quebec Official Gazette* from the Women's Minimum Wage Board, governing female workers in any class of employment in the paper industry and allied processes, sets a minimum table of wages to be paid in the city and island of Montreal and a radius of 10 miles around and beyond the island of Montreal.

The table, which involves female workers and males when replacing females, in the industry, includes paper box and paper bag making, wooden boxes partially made or finished with paper or cardboard; all kinds of paper and all fibre, pulp and paper products.

The minimum table follows: 50 per cent of the employees at not less than 15 cents per hour; 50 per cent of the employees at not less than 21 cents per hour.

In the province of Quebec, excepting the city and island of Montreal and a radius of 10 miles and around and beyond the island, the rate will be: 50 per cent of the employees at not less than 13 cents per hour and 50 per cent at not less than 19 cents per hour.

The total working hours cannot in any case exceed 55 hours per week unless a special permit has been obtained from the industrial and commercial establishments inspection department.

Container Corp. Elects Directors

At the Container Corporation of America stockholders' meeting, March 28, 1935, the following directors were reelected: Sewell L. Avery, president, Montgomery Ward & Co. and United States Gypsum Company; William R. Basset, partner, Spencer Trask & Co.; J. J. Brossard, vice-president, Container Corporation of America; Henry B. Clark, representing the Sefton Manufacturing Company interests; Wesley M. Dixon, vice-president, Container Corporation of America; George de B. Greene, New York investment banker; William P. Jeffery, partner, Jeffery Redmond Escher & Murray; Walter P. Paepcke, president, Container Corporation of America; A. M. Reed, manager paper division, Owens-Illinois Glass Company; and Stanley A. Russell, president Lazard Freres & Co., Inc.

To fill the vacancy existing for some months, C. R. Megowen, comptroller of Owens-Illinois Glass Co., was elected to the directorate by preferred stockholders, completing the board's limit of eleven members.

At the following directors' meeting, all officers were re-elected.

Obituary

Patrick J. Judge

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., April 1, 1935—Patrick J. Judge, 75, treasurer of the Highland Manufacturing Company, manufacturers of pads and papeteries, died suddenly last week at his home, 55 North Main street, South Hadley Falls. He was born in Ireland and had been eminent in studies of Irish history and literature. He was a member of the Irish Historical Society.

He was born in County Mayo, Ireland. After working as a bookkeeper in this country when young he was employed for a time by P. Garvan, Inc., and later was associated with his brother, Martin J. Judge, in the paper jobbing business; later acquiring control of the Highland Manufacturing Company. He leaves besides his wife, one son, James A., president of the Highland Company and two daughters, Mrs. Anna M. Fitzgerald and Mrs. Wilfred C. Fitzgerald, both of the Falls. The funeral will be held Wednesday morning followed by solemn high requiem mass at St. Patrick's Church at the Falls with burial in St. Rose cemetery.

George W. Van Alstyne

ST. PETERSBURG, Fla., March 24, 1935—George W. Van Alstyne, Troy (N. Y.) paper manufacturer, died at a hotel here last night. He had suffered a heart attack three days ago. He was 81 years old. His son-in-law and daughter, Mr. and Mrs. J. Leland Hodgkins, arrived from Troy this afternoon.

Mr. Van Alstyne, a native of Troy, was president and treasurer of the Troy Paper Corporation, vice president of the Hudson Valley Paper Manufacturing Company at Albany, a director of the Manufacturers National Bank of Troy, president of the board of directors of the Fifth Avenue-States Street Methodist Episcopal Church and a member of the board of directors of the Lansingburgh School District in North Troy. He was a member of the Troy Club and the Masonic order.

He came here five weeks ago for his second Winter visit. Surviving besides his daughter, Mrs. Hodgkins, are his widow and a sister, Mrs. Alice Van Alstyne of Troy. Mrs. Van Alstyne and his sister were with him at his death. A funeral service will be held here tomorrow before the departure of the family for Troy, where a final service will be held.

Karl Keferstein

Karl Keferstein, founder and senior partner of Karl Keferstein & Co., the well-known firm of paper merchants and agents, of Hamburg, Germany, died in that city on March 7. Mr. Keferstein would have celebrated his 86th birthday on March 14. He died suddenly, as the result of a heart attack, after having been in excellent health for the last few years.

Karl Keferstein was the descendant of a long line of paper makers and merchants of this name, whose achievements for the German paper industry are a matter of record. He established himself in Hamburg in 1880 and was one of the first paper agents established in that city. A few years later, he started the first direct selling connection for Swedish papers in Germany and did some real pioneering work on the Continent for the Swedish paper industry.

However, Mr. Keferstein will be chiefly remembered for his efforts in putting Kraft paper upon the world's markets. While on a visit to Munksjö about 1883 he noticed some brownish colored paper, the result of a miscook, lying in the mill yard to be junked. He found this paper very strong and pliable and felt it would be of interest to his trade in Hamburg.

He had no difficulty in selling it there, and encouraged Munksjö to pursue their experiments further, and when they perfected the Sulphate Cooking Process, Mr. Keferstein suggested the paper should be called "Kraft" Paper ("kraft" being German for "strength") as it had first been sold in Germany. For a number of years, Mr. Keferstein controlled the sale of Kraft paper in the principal Continental and export markets, and created an enormous demand for it.

Mr. Keferstein was well-known, even in America. His youngest son, Charles G. Keferstein, who became an American citizen some years ago, is export manager for the Brown Company, of Portland, Maine.

Edwin S. Reynolds

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, April 1, 1935—Members of the Miami Valley paper trade were shocked last week to learn of the death of Edwin S. Reynolds, president of the Reynolds & Reynolds Company, Dayton, at a hospital in Miami, Fla., where he had passed the winter with his wife and family. He was 65 years of age and was the son of the late Lewis D. Reynolds, founder of the firm which developed into one of the largest manufacturers of stationery goods, office systems, tablets and other paper products, in the country.

Besides his widow, Florence Stoddard Reynolds, daughter of a pioneer Dayton manufacturer, he is survived by five children, E. S. Jr.; John W. Stoddard and Adele Parrott Reynolds, of this city; Mrs. William W. Winans, of Montreal, Que.; and Miss Florence Stoddard Reynolds, now studying in New York; as well as one sister and one brother.

The day of Mr. Reynolds' funeral in Miami, the local plant was closed all day as a mark of respect. Many of the employees have been with the firm for two score years.

William S. Stedman

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., April 2, 1935—William S. Stedman, aged 78, president of the Stedman Paper Company, wholesale paper and manufacturing supplies, died Friday night at his home at 25 Harvard street after a short illness. He was born in Freeport, Ill., and after coming east located in Northampton, coming to Holyoke in 1880. He was connected with the paper jobbing house of the Judd Paper Company and in 1908 established the company that bears his name.

He remained in active direction of its affairs until about two months ago. He leaves, besides his wife, Mary (Bridgman) Stedman, whom he married in 1890, one son, William S. Jr., associated with him in the business, and two grandchildren. The funeral was held at the Skinner Memorial Chapel yesterday afternoon. The Rev. Moses R. Lovell officiated and burial was in Forestdale cemetery.

Alonzo B. Bradley

Word has been received that Alonzo B. Bradley, factory manager of the Fibre Conduit Company at Orangeburg, N. Y., passed away very unexpectedly on March 2.

Mr. Bradley was born on January 21, 1880, at Avon, N. Y. He received an E. E. degree from Columbia University in 1903. From 1906 to 1908 he was in the

construction department of the General Electric; 1914-1917 with C. W. Hunt Company, New York, as salesman and manager of electric truck department; 1918 in U. S. Army Ordnance Department in Washington, D. C. Mr. Bradley has been with the Fibre Conduit Company since 1921.

During the years 1908 to 1914 he was with his father and brother working on production of ozone, copper extraction, and iron and steel production.

He has been a member of the Technical Association of the Pulp and Paper Industry since 1928.

E. McCourt Macy

E. McCourt Macy passed away at New Canaan, Conn., Saturday, March 30, 1935. Mr. Macy was a graduate of McGill University, Montreal, and was chief engineer of woods operation of the International Paper Company for 25 years and title expert for the Gatineau Power Company.

Mr. Macy is survived by four daughters, Elizabeth, Katherine, Mrs. Stuart Emmert, and Mrs. Charles B. Barton Jr., and by two sons, Fred, who is with Dill & Collins Inc., Philadelphia, and Robert, who is with the pulp division, Weyerhaeuser Timber Company, Longview, Wash.

Mr. Macy was 70 years of age and was a member of the Canadian Club. Funeral services were held Wednesday, April 3, at New Canaan, Conn. Interment will be in Berlin, N. H., on Thursday.

Charles M. Butler

[FROM OUR REGULAR CORRESPONDENT]

PROVIDENCE, R. I., April 1, 1935—Charles M. Butler, president and treasurer of the Providence Paper Company, who was well and favorably known, died suddenly on Wednesday. Mr. Butler was stricken while on his way to business. He was taken to his residence, 24 Channing avenue, where he died shortly after.

Mr. Butler was born in Medford, Mass. He had been associated with the Providence Paper Company about 35 years. He went to Providence to live about 22 years ago. Mr. Butler was a member of the Turk's Head Club and other clubs. A wife and a daughter, Mrs. John Barnes, of Philadelphia, are living. Many of the paper trade, including representatives from Boston and Framingham, Mass., were present at the funeral, which was held from his late residence.

South Carolina Wants Paper Mill

Rober C. Peace, publisher of the *Greenville News*, of Greenville, according to a press report, was named chairman of a committee created by the legislature to seek a newsprint plant for South Carolina at a meeting held in Columbia, S. C.

J. Roy Jones, commissioner of agriculture, commerce and industry, said the committee met at his offices and named Mr. Peace chairman. Other officers elected were Rep. Olin Sawyer of Georgetown, vice-chairman, and Jones, secretary. The other members of the committee are Senator Henry R. Sims of Orangeburg and Rep. Ben E. Adams of Columbia, publisher of the *Carolina Free Press*, Columbia weekly newspaper.

"The newsprint industry," Mr. Peace said, "is certain to be developed in the Southern states and it is the purpose of our committee to do everything possible to secure the establishment of a large paper manufacturing plant in South Carolina."

Consolidated Statistics for Paper Industries

The paper industry, including all of its branches of both primary manufacture and conversion, is sixth or seventh in size of all industries in the country. Its statistical data, however, is scattered through thirty separate organizations. A central agency, to assemble and consolidate this data, would perform a useful function and would furnish the industry with very valuable material. As an illustration, the NRA is approaching the end of its probationary period. Many claims are made for it and many charges are made against it, most of which are merely expressions of opinion unsupported by facts. What Congress needs at this moment is concrete information and not opinions.

Take for example these two questions: Has the NRA increased wages and employment? Has it injured small enterprises? The Code Authority for the envelope industry has recently prepared some figures which prove conclusively that the effect of its Code has been not only to increase employment but also to increase the individual income of employees in the industry. They also prove that there has been a definite shift of volume away from the large plants to the smaller plants. This is very valuable data but if it were extended to cover the paper industry as a whole its value would be many times greater.

The method used to determine the effect of the Envelope Code on wages and employment was to make a comparison of the figures for June, 1933, with those for March, 1934. The results in detail were as follows:

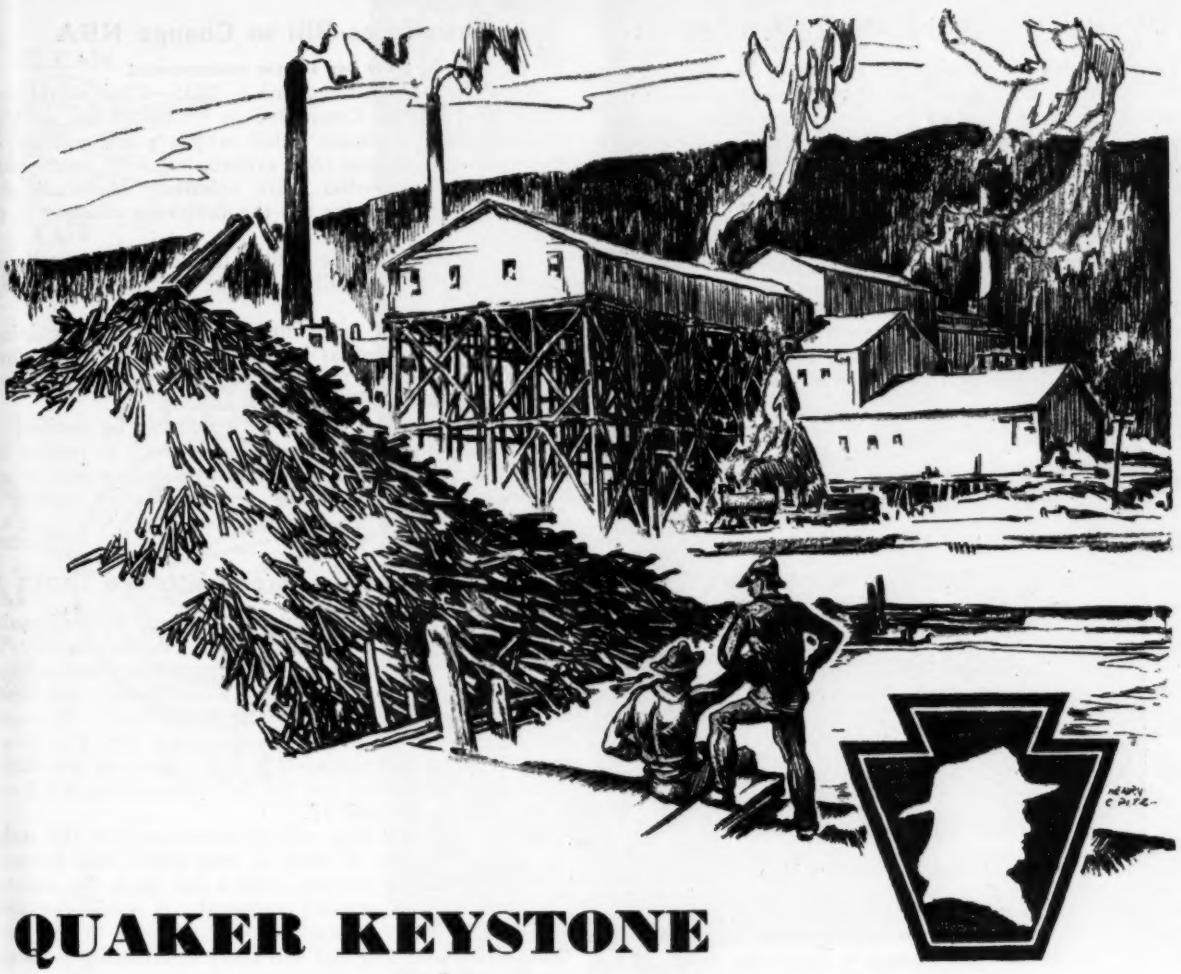
1. With practically no change in the total volume of production of the industry there had been an increase of 28 per cent in the total Industry payroll.
2. There had been a decrease of 13.1 per cent in the average working hours per week and a resulting increase of 16.4 per cent in the total number of employees.
3. There had been an increase of 26.5 per cent in the average hourly wage of employees in the Industry.
4. The effect of the increase in hourly rates had overbalanced the effect of the reduction in working hours sufficiently to produce an increase of 9.3 per cent in the average weekly wage.

To determine the effect of code operation on plants of various sizes, all plants in the Industry were classified as large, small or very small, and the percentage of the total industry output produced by each class was determined for the period 1931-1933 and also for the year 1934. A comparison of the two showed that in 1934 the large plants suffered a loss of 7 per cent of their 1931-1933 percentage position while the small and very small plants made gains of 8 per cent and 20 per cent in their respective positions.

As the first step in the direction of assembling some general Industry statistics W. W. Pickard, the Industry Coordinator, has sent a copy of the envelope report to the office of the Code Authority of each industry in the paper group with the suggestion that each prepare and furnish him with similar statistics. If these are made available promptly it will be possible to use them while Congress has under consideration the question of extension of the National Industry Recovery Act.

Keyes Fibre Co. Reorganizes

Effective March 20, the Keyes Fibre Company (new corporation) has acquired the business and assets of the Keyes Fibre Company, Inc. (old company). On and after this date all transactions will be conducted by the new company.



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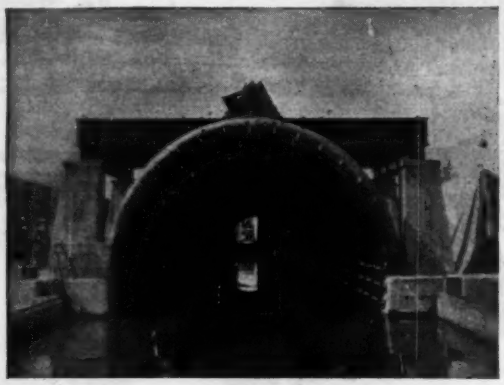
Waplan Log Barker Continuous System

The Waplan continuous log barker is best suited for mills receiving logs in varying lengths. For sawmills it is particularly suited as the refuse can be used for pulp without the expensive barking of the slabs. Advantages are also obtained in the sawmill operation as the log can be utilized to better advantage when the sawyer has the clean log in front of him, also the saws need not be sharpened so often.

A diagram of the installation is presented herewith. In this case the drum consists of 4 sections A of the same length and varying diameter. The drums revolve and are submerged in a circular concrete vat the same as the short wood drums. The drums are suspended in chains like the standard drums and two sections are hooked up to one drive shaft C.

The logs are fed to the drum by the loghaul D and



INSTALLATION IN SWEDISH MILL

pass through a special feeding apparatus E. This is necessary in order to hold the log suspended horizontally until practically the whole length is inside the drum. The feeding apparatus E consists of live rolls e_1 and idler e_2, this latter is carried in a hinged arm moving down when a log approaches and moving up when the end of the log has passed the roll.

As the drums revolve the logs tumble against one another and the bark is rubbed off, the logs move forward through the different sections and finally are discharged into the pond F, the end of the drum at this point being open.

From this pond the logs are removed by conveyor G to the chipper or sawmill. Where dry barking will give satisfactory results, for instance in southern mills, the pond in front of the drum is eliminated and another arrangement is used for taking the logs away.

The bark is removed from the vat by scrapers on the drum into bark conveyor H, the same as in the standard drum.

The manufacturing rights for the Waplan Log Barker in U. S. A., Canada and Newfoundland are acquired by Fibre Making Processes, Inc., 8 South Michigan boulevard, Chicago, Ill.

Introduces Bill to Change NRA

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 1, 1935—Chairman Harrison of the Finance Committee on Friday of last week introduced in the Senate a bill which would extend for two years the present code system, but with fewer codes and upon a somewhat more voluntary basis. Senator Harrison's bill provides for the following changes in the NRA:

(1) Codes would be limited to industries actually engaged in or substantially affecting interstate or foreign commerce.

(2) Section 7a (providing for collective bargaining) would be guaranteed as in the present act, but employes would be empowered to take civil action against employers to recover losses suffered by violations.

(3) The smaller industries would not be codified.

(4) An attempt was made in the draft to remove the possibility of monopolies, but the President would be empowered to use price-fixing and production control if necessary to prevent unfair competition.

Powell River Co. Erects Storage Tanks

Pacific Coast Pipe Company, Limited, 1551 Granville Street, Vancouver, B. C., have been awarded contract by the Powell River Company for manufacture and erection of three closely grouped ground wood storage and blending tanks, 34 feet in diameter and 56 feet high. The tanks will be constructed of the Pacific Coast Pipe Company's specially selected grade of B. C. fir. Concrete foundation work is already under way for the construciton, which will commence about April 15.

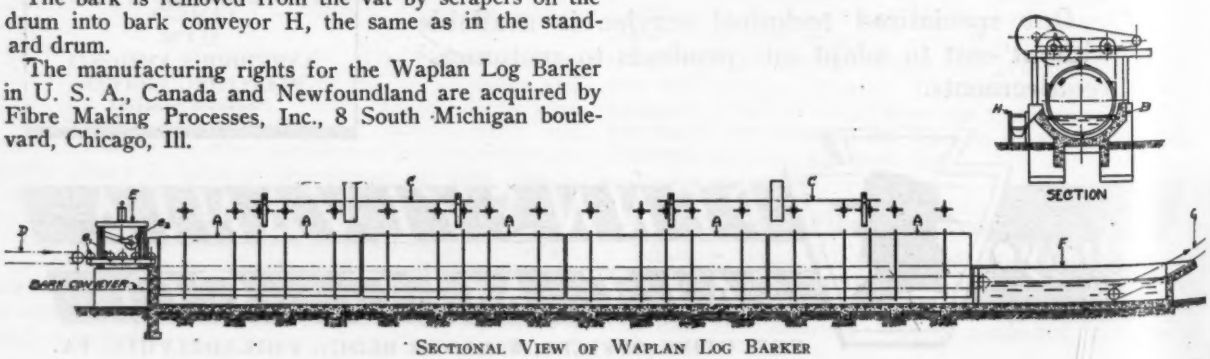
Heavy steel banding will be necessary for the tanks, and approximately 78 tons of steel bands will be used. The tanks will be covered with a flat roof, the material for which will be pressure creosoted. A special operating platform centrally located affording access to the three tanks will be erected and will carry distributing pipes and service connections.

Mohawk Paper Mills Changes

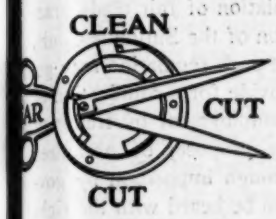
The Mohawk Paper Mills, Inc., of Cohoes, N. Y., have sent out the following statement: "We regret to announce that William J. McChesney has resigned from our organization.

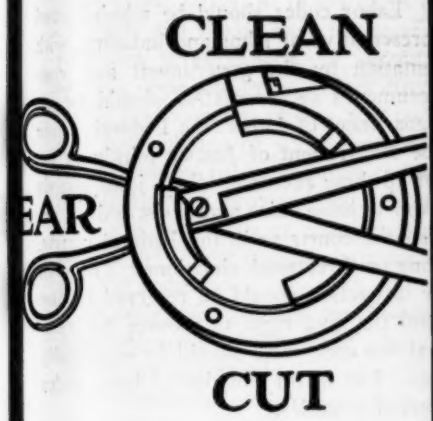
"We are pleased to announce that Walter E. Keller and Harry T. Johnson have been elected vice-presidents. Mr. Keller will continue at the New York office and Mr. Johnson will be at the mill.

"Richard E. Eklund will take Mr. Johnson's place at our Chicago office."

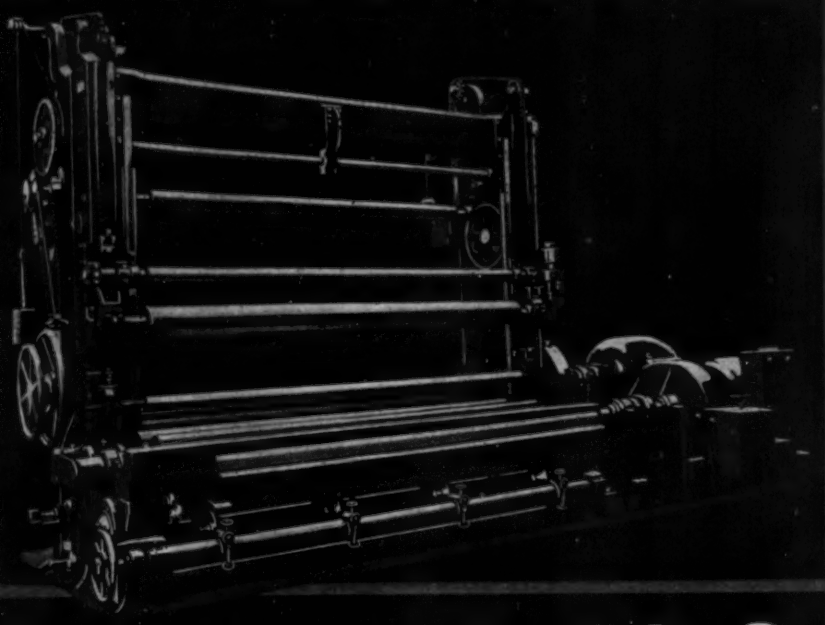


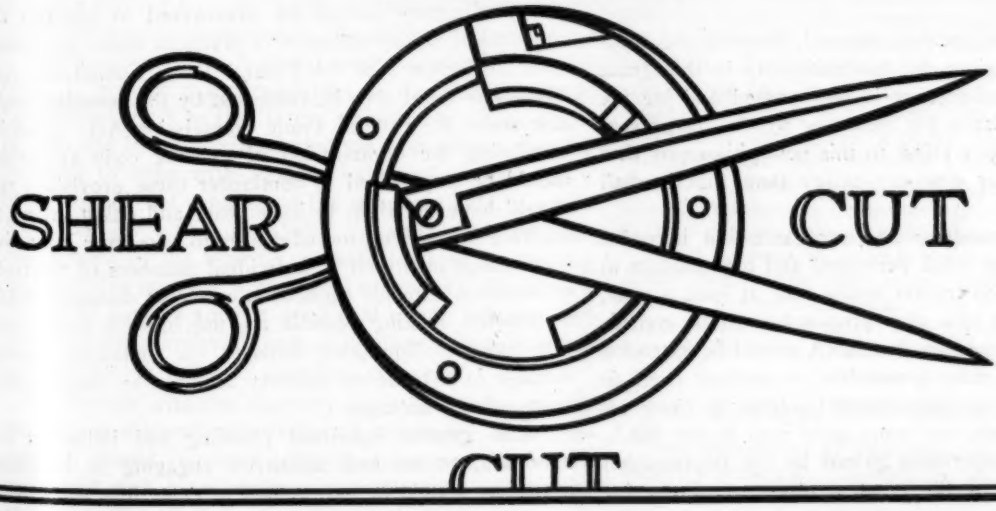
SECTIONAL VIEW OF WAPLAN LOG BARKER



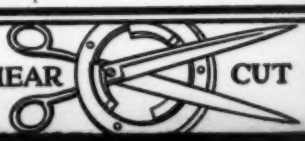


WINDERS *and* REWINDERS





Samuel M. Langston Co., CAMDEN, N. J.



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WHAT SHALL NRA BE?

Speaking on "What Shall NRA Be?" before the Commerce Committee of the American Bar Association recently, Jacob K. Javits, Esq., of Javits & Javits, attorneys, of New York, who is a widely recognized authority on the codes of fair competition, stated that in a consideration of the National Industrial Recovery Act, its enactment or modification, he believed we were inclined to be too greatly influenced by its short range development. Mr. Javits drew attention to the fact that the Act was conceived in an atmosphere of bank closing and public distress.

The President, the speaker asserted, deserves the gratitude of every American for his intrepidity in this grave emergency. That emergency is now passed and we are faced with the necessity for measures which will prevent its recurrence and give effect to this new philosophy that we shall control our economy rather than that it shall control us.

The period of transition and reorganization in order to adapt the existing NRA personnel and organization to a new plan of administration would take at least a year, and as a result any new plan proposed must be considered in the light of the fact that NRA should be extended for at least a year under a mandate to conform itself to such new plan of administration and policies as Congress may set forth. There are many good men in the NRA, and the intensive experience gained by the organization in coping with one of the greatest problems of our industrial age should be preserved intact.

Provisions for wages, hours and conditions of employment, including the much controverted collective bargaining section, should be treated both for purposes of legislation, administration and executive responsibility as a separate problem from the regulation of fair trade practices. Depending upon the decision of the Supreme Court, which will indicate to what extent such regulation may go, the new Recovery Law should provide for a codification of wages, hours and conditions of employment by trades or industries through the voluntary proposal of organized trade bodies or, if necessary, through imposition by government after a full opportunity to be heard with the right of review of administrative findings by the Circuit Court of Appeals. As an agency to administer such labor codes or to act as the fact finding machinery for imposing them where necessary, a division of the Department of Labor should be created. Labor codes should be administered by joint boards representative of labor and industry, with non-voting representation by the government and consumers. The government's representative should be an appointee of the Department of Labor, the Federal Trade Commission and the Department of Justice jointly to insure coordination of all these agencies. Such joint boards should have the power to issue cease and desist orders, reviewable either in special courts or in the Federal courts, against any violations or threatened violations. The civil right to proceed by injunction should be reserved to any person aggrieved and the civil right to recover for nonpayment of wages at the code rates should be specifically granted to employees. For wilful violation of labor codes there should be criminal penalties.

The whole field of trade practices should be dealt with by an agency having equipment and organization for the purpose. It is recognized that a certain number of trade practices constituting common honesty in business should be imposed upon trades or industries in interstate commerce if not voluntarily sought by their representative associations. With some slight modification the power to do this already resides in the Federal Trade Commission and that agency should be empowered to approve the codification of fair competitive practices under an amendment to Section 5 of the Federal Trade Commission Act. Violations could then be redressed by the remedies available under the Federal Trade Commission Act. Agencies paralleling the organization of existing code authorities should be empowered to administer these provisions and should have the right to issue cease and desist orders to institute injunctive proceedings or to take over injunctive proceedings instituted by individual members of the trade or industry. In this connection a rule of damages should be enacted, making possible the use in such trade practice codes of liquidated damages for violations causing damage to a trade or industry at large as distinguished from private damage.

As to general industrial planning and industrial cooperation, trades and industries engaging in interstate commerce should be encouraged to enter into agreements providing for such regulation. Such contracts should be subject to the approval of the Federal Trade Commission and should run for limited periods not exceeding two years. They should regulate competitive practices in any trade or industry or between trades and industries whose prac-

tices are not covered under the mandatory codes. Such contracts when approved should confer exemption from the Antitrust laws upon acts performed under them. Such contracts should be binding on the members of a trade or industry entering into them as parties. The Federal Trade Commission should be empowered to make rules and regulations for the submission to it of such contracts for its approval. The actions of the Federal Trade Commission in approving such contracts or amendments thereto should be subject to judicial review as at present and its findings of fact if supported by the evidence should be conclusive. The Federal Trade Commission should be empowered to make investigations as to violations or abuses of approved contracts and should have the power of subpoena to support such investigations. It should also have the power to issue cease and desist orders directed to any provisions found objectionable, or any acts under them. The remedies for violation of such contracts should follow in the main remedies for violation of codified rules of fair trade practices above provided for. It should be possible to transpose provisions of contracts found to be practicable and in the public interest into the mandatory fair trade practice codes.

As standards to guide the Federal Trade Commission in the approval of fair trade practice provisions, the following are suggested:

To enable maintenance of wage and hour standards; to enable the establishment of unemployment insurance, old age and health insurance, and profit sharing between employer and employee; to eliminate the waste of natural resources; to maintain general solvency in a particular trade or industry or one directly related to it; to eliminate wastes in production or distribution; to increase production, improve quality and reduce prices; to eliminate practices uneconomically reducing the volume of employment; to enable earning of a fair profit to trade or industry performing economic functions in the public interest.

The program here proposed would probably also be found to require a reorganization of the Federal Trade Commission itself so that in the membership of the Commission and in its administration the Commission may be prepared to cope with modern industrial needs with a broad outlook not confined to the restricted field in which it has in late years operated. To accomplish this, an enlargement of the Board to include some of the leading figures active in NRA would seem necessary. The Board too would have to adopt a good deal of the practice, and receive powers similar to those of the Interstate Commerce Commission, in order to expedite its work.

Side by side with this statutory movement there is great need for a Federal corporation of industry. Such corporation should represent industry, labor and consumers and could well be a congress representative of the organized bodies of these three groups. Consumer representation need not necessarily be equal to the others because in industry itself exist the greatest consumers. Manufacturers consume raw materials. Wholesalers and retailers consume almost all commodities and are directly responsible to public demand. A Federal corporation of this character could through committees settle all jurisdictional disputes arising under codes and contracts and could maintain arbitral facilities for the use of industry. Such agency should gather and compile statistics on trade and industry and could do the factual work for the Department of Labor and the Federal Trade Commission in connection with their code activities. First and foremost, however, such corporation could be the voice of industry in government so that policies and programs may not be promulgated, as they have been under the NIRA, without full consultation with organized industry and the recognition of its legitimate requirements.

V. H. Larsen Heads Miami Shippers

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, March 25, 1935—V. H. Larsen, sales manager of the Crystal Tissue Company, at Excello, near Middletown, has been elected president of the Miami Valley Shippers' Association. Mr. Larsen's associates are R. V. Boswell of the Maxwell Paper Company, Franklin, vice president; H. N. Stetson, of the Harding Jones Paper Company, Excello, treasurer; and the following Board of Governors:

J. J. Holloway, of the Wrenn Paper Company, Middletown; H. T. Ratliffe, of the Champion Coated Paper Company, Hamilton; D. J. Monarch, of the Miami Valley Coated Paper Company, Franklin; and C. J. Nicol of the P. A. Sorg Paper Company, Middletown.

The organization, formed for the purpose of combining shipments of 22 members of this vicinity into cars and trucks, shipped a total of 61,000,000 pounds of paper during the year, which is an increase of 100 per cent over the previous year. These shipments were sent to approximately 50 cities in different sections of the country.

Southern States Bid for Paper Mills

A press dispatch from Birmingham, Ala., says that with the rise of a white paper pulp industry in the South freely predicted, a number of states are bidding for the first mill. Tax exemption for periods ranging up to 15 years is the bait dangled before the eyes of promoters by Alabama, Georgia and possibly other states.

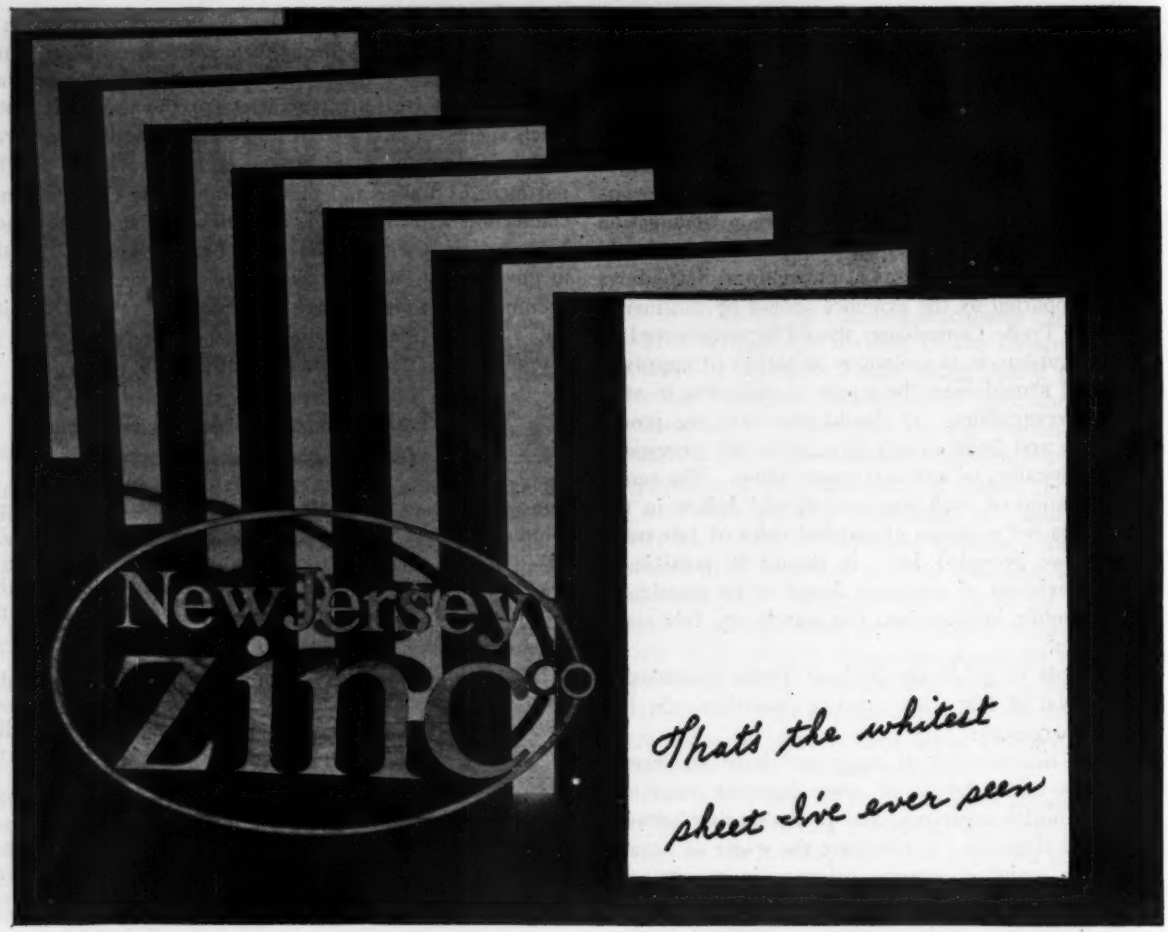
Alabama started out with an offer of five years tax exemption and then amended a bill in the legislature to double it. Then Georgia acted to make the exemption 15 years. Alabama is determined to offer a similar exemption. Other states may possibly match this offer.

Local interests in at least four states have applications under preparation for loans from the Reconstruction Finance Corporation since Jesse Jones, RFC head, said paper mill security would be acceptable. These states are Georgia, Florida, Arkansas and Alabama.

B. C. Paper Mills Show Improvement

Two indications of improvement in the pulp and paper industry in British Columbia are seen in the current news. The industrial bureau of the Vancouver Board of Trade reports that pulp and paper exports from the province have increased from 290,860 tons in 1931 to 354,059 tons in 1934.

The 1934 financial statement of the B. C. Pulp and Paper Company shows that its 1933 net loss of $260,717 was reduced during 1934 to $21,619.



. . . In the printing plants through which your papers pass enthusiastic comments like this will be heard on Zinc Sulphide pigmented sheets. The printer will like such papers because of their high opacity . . . the surprising lack of "show-through" . . . the brilliant whiteness and excellent printing surfaces. The buyer of printing will appreciate the easy reading qualities and superior appearance of the printed piece.

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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Beater Water Control System

By Malcolm B. Hall[1]

One of the primary upsetting conditions in making paper is the variation of consistency in the beater chest. If the consistency in this chest can be held reasonably uniform so that the consistency to the jordan is reasonably uniform, then uniform jordaning may be expected.

The practice of dumping beaters directly to the beater chest is the cause of varying the consistency in the beater chest, and in order to overcome this condition it is recommended that beaters be dumped into an intermediate chest of one-beater capacity.

The amount of water used to furnish a beater may be controlled closely. When the beater is ready to dump the stuff is at around 7 per cent consistency. This is dropped into the intermediate chest and the beater is washed down with sufficient water to bring the consistency of the intermediate chest to approximately 4 per cent. Agitation in the intermediate chest keeps the stuff of uniform consistency throughout, and when thoroughly mixed the intermediate chest is dumped into the beater chest.

The entire process to furnish water measurement and wash water measurement together with intermediate chest agitation may be handled entirely automatically, and the complete apparatus is illustrated and described herewith.

Description of Beater Water Volume Control System

The beater level controller, recording interlock type. (1) records the water level in the beater and has a high and low index setting. The high setting determines the maximum water level. The low setting is at some intermediate point between the high level and an empty beater. Instrument (2) is the intermediate chest level controller of the recording interlock type and is provided with an auxiliary stirrer control mechanism. This instrument has a high and low setting index adjustable over the range of the instrument. (3) is a pneumatic starter for operating the water to the beater when there is stock in the intermediate chest.

In starting up the operation we will first assume that there is no material in the intermediate chest and nothing in the beater. The operator first opens the hand valve in the beater water line and then turns the air supply on to the control equipment and the pneumatic starter valve is in position "A." The air passes through the air relay mechanism in instrument (2) through the pneumatic starter (3) through the air relay system in (1) and opens the controlled valve in the water line. Water runs into the beater until the maximum level setting is reached. When through instrument (1) air supply is cut off from the water valve and it closes.

Furnish is then supplied to the beater and the beating operation proceeds. A record of the time of beating is shown on instrument (1).

When the beater is jumped into the intermediate chest and the level starts to fall in the beater, instrument (1) automatically opens the water valve and allows water to flow into the beater and through the beater to the intermediate chest until the level in the intermediate chest reaches a predetermined point. As the intermediate chest begins to fill, a record of it is made on instrument (2) and when the record reaches the predetermined level setting, which is adjustable, instrument (2) cuts off the air from instrument (1) which in turn closes the automatic water valve and at the same time instrument (2) kicks in the pneumatic switch which starts the stirrer or agitator.

While the intermediate chest is being agitated the beater can again be supplied with water. This is done by throwing the starting lever on the pneumatic starter (3) to the "B" position. The air supply then passes around instrument (2) and on to instrument (1), which opens the water valve and it remains open until the level has reached the predetermined setting on instrument (1).

The Interlocking Feature

The interlocking feature in both instruments (1) and (2) is as follows:—When the level reaches the maximum setting and the air is cut off to close the water valve, the air cannot go on to the water valve again until the level drops to the low setting, and in the case of instrument (2) when the lever in the intermediate chest reaches the maximum setting the air supply is cut off from instrument (1) and closes the water valve and the air supply cannot again be admitted through nstrument (2) until the intermediate chest has emptied and the level dropped to the low setting. This offers the maximum protection against careless operation because if it is desirable to fill and operate the beater while there is any material in the intermediate chest, the oprator has to operate the pneumatic starter by turning the lever to position "B." This by-passes instrument (2) and allows instrument (1) to control the water level in the beater and after the water has been brought up to the desired level and the valve automatically closed, the pneumatic starter automatically returns to the "A" position through a pneumatic release spring latch arrangement

[1] Manager, Pulp and Paper Division, The Foxboro Company, Foxboro, Mass.

and as long as there is any material in the intermediate chest, instrument (2) cannot pass air through the pneumatic starter to instrument (1), so that there is no way of getting additional water into the beater after it has once reached the maximum level until the intermediate chest is empty.

The agitator cut-out may be arranged so that it will start to agitate when the level is within one or two inches of the maximum and will continue to agitate until the level again drops to one or two inches below the maximum.

A further automatic feature may be added in the form of a dump valve lock which will prevent the dump valve from being opened as long as there is any material in the intermediate chest. This would make the entire operation automatic and foolproof with the exception of the operation of the pneumatic starter (3) and this would only have to be operated when it was desirable to furnish a beater with stock in the intermediate chest.

Summary

As long as there is any material in the intermediate chest the beater could not be dumped providing it had a dump valve lock or if not, at least no water could flow into the beater as long as there was material in the intermediate chest, after the beater has been filled to its initial level, which leaves the situation that if there is any material in the intermediate chest and the beater is ready to dump, nothing can happen. But, just as soon as the intermediate chest is empty, instrument (2) would automatically unlock the dump valve lock, which would permit the beater to be dumped, and then as the level in the beater fell, the water valve would automatically open and add the necessary amount of dilution water until the level in the intermediate chest was again up to the maximum desired height.

Lake States TAPPI to Meet

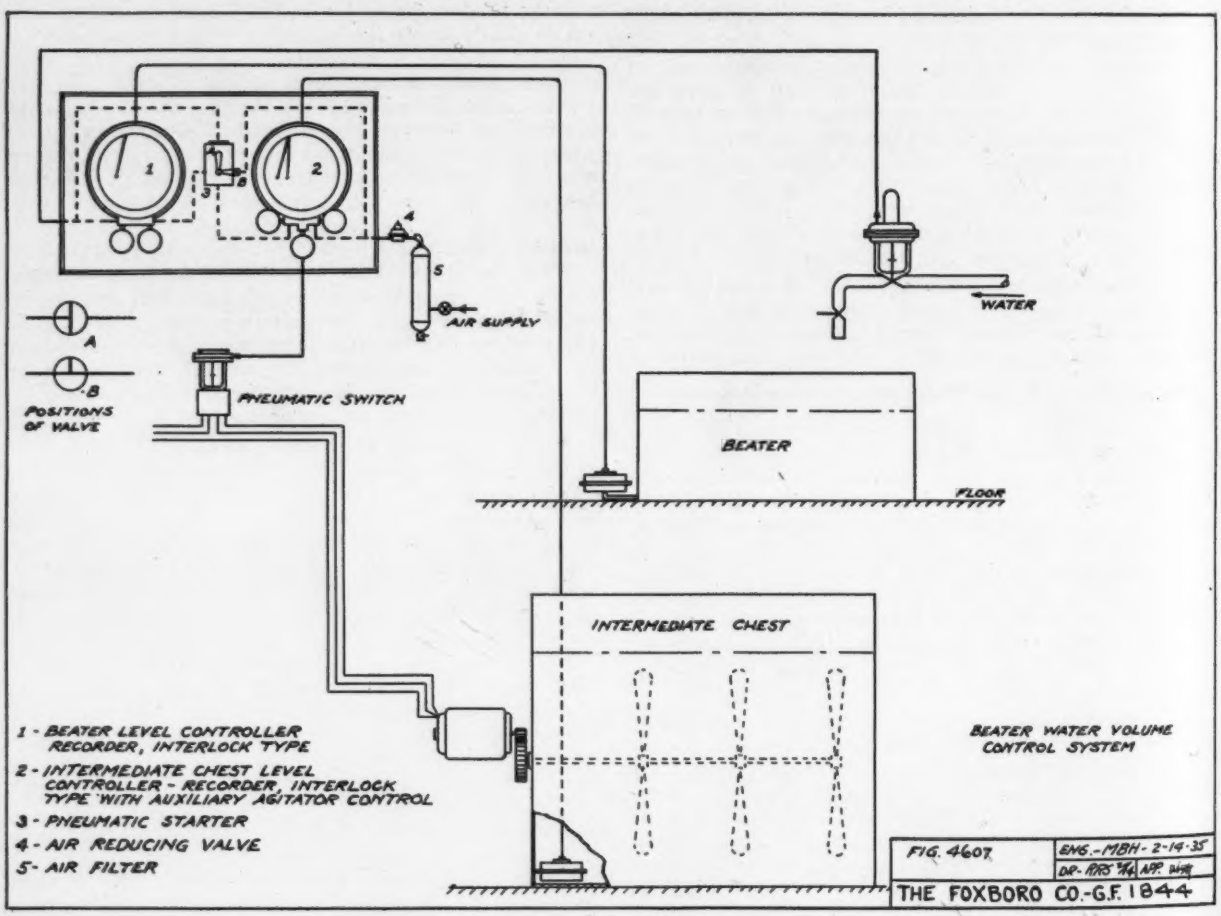
The Lake States Section of the Technical Association of the Pulp and Paper Industry will meet at the Hotel Conway, Appleton, Wis., on Tuesday evening, April 9, at 6:30.

E. I. Bridgewater of E. I. duPont de Nemours, Inc., Wilmington, Del., will be the speaker and will talk on "Duprene—The Economics of Acetylene Polymers and Their Derivatives."

This will be a joint meeting with the local section of the American Chemical Society. Anyone wishing to attend will be welcome.

Court Rejects Bid for Case Mfg. Co.

HARTFORD, Conn., April 1, 1935—At a hearing in superior court, Judge Ernest A. Inglis refused to approve the conditional sale recently of the Case Manufacturing Company, paper-making concern of Unionville, which has been in receivership for some time. The highest bid, made by Arthur Sachs of Brooklyn, N. Y., and Myer Saunders of Hartford, was described in court as $2,000 above encumbrances, the latter said to total about $13,000.



BEATER WATER VOLUME CONTROL SYSTEM

Reliance Electric Joins TAPPI

The Reliance Electric and Engineering Company of Cleveland, Ohio, has become a contributing member of the Technical Association of the Pulp and Paper Industry.

The Reliance Electric and Engineering Company was founded in 1906 to manufacture a special type of direct current adjustable speed motor which was a very decided advance in the art at that time. From a small beginning it has advanced steadily, until at the present time it has a complete line of alternating and direct current motors up to 300 h.p.

The Reliance has always been a group of engineers interested in building a high grade product, and catering to the more severe and exacting demands of industry. For the paper industry the Company has a special application development department headed by R. H. Smith, which has made many contributions to the technical advance of the industry. Notable have been applications on supercalenders, paper machine drives, winders, felt helper's drives on board machines, sectionalizing dry loft drives, and constant tension back stand generators, general applications of motors with special insulation and protection for severe applications.

A corps of sales engineers is maintained in all parts of the country, from C. E. Robinson (Robbie) in Boston to Sam Russell in San Francisco and Olson in Seattle, Frank Johnson in New Orleans, J. L. Van Nort (Van) in Chicago, Charlie Herbert in New York, and other men known in the industry in other principal cities. Each man is equipped to give engineering service to the paper industry.

The Company will be represented in the Technical Association by J. W. Corey, 1088 Ivanhoe Road, Cleveland, Ohio.

Riehle Testing Co. Becomes Part of A. M. & M.

Riehle Brothers Testing Machine Company, Philadelphia, Pa., manufacturers of Riehle testing machines, has become a part of American Machine and Metals, Inc., according to an announcement issued by E. P. Holder, executive vice-president of the latter organization.

Abbott F. Riehle will continue as general manager with headquarters at the new executive office address—100 Sixth avenue, New York City. The engineering staff and key men have been transferred from Philadelphia to the modern 83-acre plant of American Machine and Metals, Inc., located in East Moline, Ill., where greater facilities will insure increasingly better service to users.

This announcement will be of much interest to the industrial field which, since 1825, has been served by Riehle in its pioneering and development of testing machines. The American Machine and Metals, Inc., is the parent company of DeBothezat Corporation; Halliwell, Inc.; Oil Products Appliance Company; Tolhurst Machine Works; Trout Mining Company and Troy Laundry Machinery Corporation.

To Be Carton Div. of American Coating Mills

[FROM OUR REGULAR CORRESPONDENT]

ELKHART, Ind., April 1, 1935—The Illinois Carton and Label Corporation, here, which for the past year has been owned by the American Coating Mills, has been dissolved as a separate corporation and after today will be known as the American Coating Mills, Inc., Carton Division. Personnel and organization of the carton plant will remain the same and the manufacture of folding cartons and labels will be continued.

TAPPI at Atlantic City in September

The Technical Association of the Pulp and Paper Industry will hold its fall convention at Atlantic City on September 18 to 21, 1935.

A feature of the meeting will be a tour of paper mills and printing plants in Philadelphia on September 18th. This tour will probably include the mills of Dill & Collins Inc., and the Container Corporation of America, and the printing plant of the Curtis Publishing Company, pubilshers of the Saturday Evening Post. Other mills and institutions will keep open house during the Convention for the many who will wish to visit them.

Plans are being made by many to include the TAPPI meeting in their vacation plans and to spend a week or more at Atlantic City at the low rates that will be available to the members. Members and friends of the association are urged to bring their families and friends along with them to enjoy the wonderful seashore facilities of this great convention city.

Tom Ireland Goes to Chicago

T. H. Ireland, well known representative of Crane Company in New York has been transferred to the general headquarters of the Company in Chicago.

Mr. Ireland started with Crane at Minneapolis in 1910 in the Engineering Sales Department. In 1913 he went to Duluth, in 1919 to St. Paul, Minnesota, and in 1922 to New York City, where in 1925 he established the Pulp and Paper Department. As the special representative of Crane he became a prominent figure at the various conventions of the Technical Association and the Superintendents Association.

Because of his helpful and sympathetic interest in the steam distribution end of paper and pulp manufacture, Tom has a host of friends and well wishers throughout the industry. In his new position he will again be active in the industry and will be glad to welcome friends at his new offices at 836 South Michigan Avenue, Chicago.

Abitibi Power Settlement

TORONTO, Ont., April 1, 1935—Settlement at $2,000,000 has been made by the Hydro Electric Power Commission, acting on behalf of the Ontario government, with the Dominion Construction Company, which did the major part of the work on the Abitibi power development. The company claimed $3,383,500 as a balance of a job which finally cost $11,629,150 as far as the company was concerned. The Ontario Power Service Corporation, a subsidiary of the Abitibi Power and Paper Company, Limited, Toronto, which awarded the contract to the Dominion Construction Company for the building of the dam and wheel pits, failed in 1932 and the work was carried to completion by the receiver and latterly by the engineers of the Hydro Commission. At the time of the failure of the Ontario Power Service Corporation, a sum of $9,573,000 had been paid on the contract, and by the receiver afterwards $55,256, bringing the total payments to $9,629,150. There remained a balance claimed by the Dominion Construction Company of $3,217,000, plus fifty per cent of $333,000, or a total of $3,383,000. Lengthy negotiations were carried on for settlement, the engineers of the Hydro Commission refusing to concede more than $1,970,000 of the claim advanced. Finally the Dominion Construction Company offered to accept $2,000,000 in full settlement of all claims and an order-in-council has been passed by the Ontario government, which has come into the ownership of the property, accepting the offer.

Paper Stock Treatment, Mixing and Beating With Rods*

By Sidney D. Wells[1]

Abstract

In the application of the principle of beating with rods to the straw board industry marked savings in power requirements are obtained, together with greater yields through the use of less severely cooked stock and the reduction of knots to useful pulp rather than in leaving them to be a source of screenings or settlings which are allowed to go to waste.

Further application of the principle will make possible the combination of the function of cooking and beating with material savings in equipment and labor and improvement in quality.

The application of the principle to the deinking of paper stock makes possible the retention of all of the benefits of the low density systems now in use with the additional advantage of steam requirements as low as in the otherwise more costly and unsatisfactory high density systems.

The preliminary treatment of pulps with rod action makes possible more uniform bleaching, the saving in bleach required to accomplish equal degrees of bleaching and the breaking up of shives and organic dirt so that they are bleached along with the otherwise completely separated fibers.

Pulps cooked so as to preserve strength may be partially bleached in the rod mill with the simultaneous development of strength and the elimination of organic dirt and shives.

Dry pulp sheets, paper broke, waste paper, etc., which cannot be successfully disintegrated to separate fibers in beaters, jordans or other equipment commonly used for the purpose can be completely converted to slush pulp in the rod mill without loss of strength, reduction in freeness or the formation of fish eyes. These results are accomplished without the use of steam or chemical except in the case of glassine, casein coated and similar stocks in which the bond between the fibers has been artificially produced or developed.

Long fibered pulps are developed in strength by beating with rods with less loss in freeness and tearing strength than by any of the commonly used types of beating or refining.

Short fibered stocks are developed in strength with less than half the drop in freeness and with from twenty-five to fifty per cent greater development in strength than is possible with any of the standard equipment now in use. Standard soda pulp can be developed in strength so as to make printing paper equal in strength to standard grades in which sulphite pulp is ordinarily used and by the omission of the sulphite pulp marked improvement of the finished sheet in formation, surface and opacity is obtained.

Preliminary development in strength of long fibered pulps may be accomplished in the rod mill with from one third to one half the power required by beaters or jordans.

Elimination of specks in old paper stock can often be accomplished with one sixth the power taken by jordans or beaters to do the same work.

Dispersion of the fibers of any stock is accomplished more adequately with improvement in formation and increase in the speed at which well formed paper of specified strength can be made.

Either paper of equal quality can be made with the use of from 30 to 50 per cent less power for beating and refining or paper of much superior quality can be made with the same power consumption used before installation of the rod mills.

Where pump capacities, drives, etc., will permit as much as twenty-five per cent more paper can often be made on the same paper machine with stock given a preliminary treatment with rods to the extent of from 150 to 200 kw-hr. per ton.

Paper having special characteristics such as extreme tearing strength, abnormal porosity, capacity for synthetic resins and similar mixtures, ease of penetration, blotting, asphalt impregnation etc., can often be made to better advantage and with improved characteristics by giving the stock an adequate treatment with rods at some point in the process.

The installation of the rod mill in closed circuit with screening systems makes possible the complete closing of the same with the complete conversion of the screenings to accepted stock and, in the case of waste paper conversion or groundwood manufacture, with decided improvement in the major product.

Experience during the past twelve years with the use of rods for the mixing and beating of paper stock indicates conclusively the merits of the principle in practically every application in which it has been tried. The advantages that can be obtained, however, depend upon proper installation with adequate provisions for uniform feed at constant consistency and under such conditions it seems reasonable to expect that similar or additional advantages are possible in lines of pulp and paper manufacture that have not yet tried out the new system.

The application of the idea of beating with rods to pulp and paper manufacture during the past five years has created considerable interest and led to a number of applications in quite different fields of paper making with widely different objects in view. The idea was conceived in the summer of 1923 and reduced to practice a few months later. The first large unit on sulphite was installed in a paper mill in Michigan in 1925, two units were installed in a mill in Wisconsin to beat kraft in 1926 and several units were installed in Tennessee and the Carolinas in 1926 and 1927 to pulp softened extracted chestnut chips for the manufacture of corrugating paper resulting in a new basic industry and a fundamentally new product. Accounts of results obtained with many of these units have been published. There has since been a number of installations, however, which show interesting results that have not been published so far as is known to the writer if exception is taken to the abstracts of the proceedings of the meetings of the technical societies in Germany and Scandinavian countries which seem to indicate consider-

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y. Feb. 18-21, 1935.

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able interest and development in Europe with which we are not in contact.

The developments in this country have been along the lines of more advantageous use of the principle of beating with rods in the treatment of strong pulp such as kraft, the dispersion of fibers at heavy consistency with the attendant nodulization effect and its use for mixing in the treatment of fibrous stock with chemicals and heat for the purpose of fiber liberation, digestion and bleaching.

Straw Board and Paper

One of the earliest applications of the principle was in the straw board industry. In this application the fibrous material is taken after it has been cooked in globe rotaries. In most of the installations the stock has been given a breaking in and partial washing before the treatment with rods which are very effective on this sort of material.

Several installations are now in operation and the stock obtained therefrom has been found to be particularly free from knots, the bugbear of operation with the standard type of beater washers and jordans. Stock too raw to successfully handle with the usual equipment is easily prepared in the rod mill to a satisfactory condition with considerable savings in power and improvement in yield. The following table will show the power requirements of the two systems:

	Standard System	Rod Mill System
Breaker Beater	50 h.p.	50 h.p.
Rod Mill	.....	75 h.p.
Decker Washer	.....	10 h.p.
Washer Beaters	200 h.p.	.....
Jordans	300 h.p.	150 h.p.
	550 h.p.	285 h.p.

The use of the rod mill as indicated above makes use of its action as a beater.

The fact that the action of the rods is one of the most effective mixing methods known has been entirely overlooked. This was natural, however, in view of the fact that in every plant where they have been installed ample rotary capacity existed. Later work has demonstrated the feasibility of using rod mills as vessels for carrying out exceedingly rapid chemical reactions. By the substitution of caustic soda for lime it is possible to properly digest straw at 200 deg. F. in twenty minutes so as to yield a superior pulp for the manufacture of corrugating paper or straw board with yields as high as those obtained in the usual practice in rotaries with milk of lime as the cooking agent. The action is too rapid for uniform cooking in ordinary cooking vessels. The rod mill, however, gives the intimate and active mixing required, and the satisfactory nature of the operation has been demonstrated in numerous instances. Two rod mills in series followed by two pairs of screw presses in series provide a complete cooking, disintegrating and washing layout which is capable of handling a flow of stock sufficient for the manufacture of eighty tons of board or paper per day with one quarter of the man power usually required for these operations. Building space required is reduced in like proportion and the hookup lends itself to recovery of chemical with marked economy and the avoidance of stream polution.

The efficient use of the rod mill as a continuous digester of straw depends upon operation at a consistency of 20 per cent to keep the steam consumption down to what is used in rotary operation. At this consistency the stock is resolved into nodules (*1*) which can be handled by conveyors or pneumatic systems.

Stock pits, conveyors, and beaters are entirely avoided with the [illegible] and disagreeable conditions that go with them. The power required for such a layout capable of reducing 120 tons of straw to stock sufficient for the manufacture of 80 tons of board or corrugating paper is shown below:

2—7x16 feet Marcy Rod Mills	360 h.p.
4—Screw Presses	160 h.p.
2—Jordans	300 h.p.
	820 h.p.

Without taking advantage of the possibility of the recovery and reuse of the soda the extra cost of the caustic soda over lime offsets the saving in labor used for charging rotaries.

Where soda recovery is practiced, however, the labor required in that operation is less than half of the amount of labor saved by the elimination of the rotary room stock pit, and beater room. In addition there are no waste disposal problems and a product is produced which is free from lime and lime troubles, and also capable of manufacture into paper or board considerably better in strength and other characteristics than the usual product.

Paper Recovery and Deinking

The fact that paper stock under the action of rods at consistencies between fifteen per cent and thirty per cent forms into nodules (*1*) with the fibers therein in only loose contact and capable of resolutions into slush stock at lower consistencies with only simple mixing or agitating devices is of considerable importance in any operation making use of old paper stock. In 1921 and 1922 (*2*) the writer was associated with a deinking project which made use of the colloidal properties of bentonite to assist in the removal of printing ink from paper. On newspaper the process was successfully used on account of the ease with which this stock disintegrated at room temperature. In the third mill in which the process was installed, however, the raw material was waste magazine, mixed manila and other types of waste in which casein coated and hard sized papers occurred. A standard beater was used to disintegrate the stock and it was found that without heat the fibers were not thoroughly separated. Heat gave satisfactory disintegration but at a consistency of six per cent the amount of steam required was such that there was no economic advantage over the processes for deinking free stock then in use. If the principle of beating with rods under nodulizing conditions had then been known and made use of the temperatures required to disintegrate the casein coated or hard sized papers could have been attained with a reduction in steam consumption of 83 per cent and the whole operation would have been rendered very satisfactory and profitable.

The systems now used for the recovery of printed papers free from groundwood have been divided by Milham (*3*) into two general classes, the "low density" and the "high density."

The advantages of the first are as follows:

(1) Continuous system
(2) Stock more easily washed
(3) Brighter color
(4) Lower labor cost

It has the very serious disadvantage, however, that 8,200,000 B. t. u. of heat are required per ton of paper treated and the harder inks and the harder sized and coated papers occasionally pass through without being thoroughly reduced to separate fibers.

The advantages of the high density system are:

(1) Better control.
(2) Thorough disintegration of inks, sizings and coatings.
(3) Heat requirements only 1,000,000 B.t.u. per ton of paper.

The stock obtained, however, is not so bright and labor costs are higher.

Treatment of the stock at 20 per cent consistency and 200 to 210 deg. F. in the rod mill requires only 1,380,000 B. t. u. per ton of paper and all the advantages of the low density system are obtained with a steam cost reduced by 83 per cent. The active mixing and rubbing that occurs in the rod mill completely disintegrates the hardest inks, coatings, and sizings and the stock obtained washes more easily and is brighter than that cooked at higher temperatures. Exhaust steam only is required and the back pressure necessary is even less than that required for the low density system.

The sorting and washing methods found to be most satisfactory for other systems are equally satisfactory with the rod mill substituted for the cookers and beaters. One 5 x 14 foot Marcy rod mill requires 90 h. p. and thoroughly disintegrates 36 tons of waste paper per twenty-four hours.

Preparation For Bleaching

The importance of complete separation of fibers and preliminary working of the same to facilitate uniformity in bleaching has been pointed out by Helder (*4*). The advantage of beating with rods for this purpose lies in the complete flexing of the fibers without cuttitng or fibrillation and the elimination of shives or fiber bundles so that the bleach acts on each individual fiber from the start. It is common knowledge that bleaching will usually make any shives or fiber bundles that occur in the pulp more apparent, especially if prepared with the object of making possible the survival of the potential strength in the original material. By preliminary treatment with rods, however, the disintegrated shives or fiber bundles, even though higher in lignin than the surrounding fiber, come under the action of the chlorine or hypochlorite from the start and, with the more rapid consumption relative to that of the better cooked fibers, they end by being in more nearly the same condition as the pulp in general. Any development of strength that occurs in the rodding is retained by the pulp throughout the bleaching operation and is reflected in the finished papers.

If a pulp of extreme freeness is desired it is secured by rodding the pulp at a consistency above 15 per cent rather than at consistencies more favorable to the development of strength. No discoloration from the use of iron rods or lining occurs because the operation is carried on under slightly alkaline conditions and is followed by the bleaching treatments.

The rod mill treatment, if performed at stock consistencies above 5 per cent, causes absolutely no cutting or formation of fiber debris and the capacity of the washing equipment is in no way reduced. The losses due to the same cause are also avoided.

The advantages in the manufacture of full bleached pulps derived from rodding the stock before bleaching are considerable. The stronger the pulps and the more exacting the bleaching step, the greater are the benefits. In the case of partially bleached pulps the advantages are even greater because pulps of this nature should be cooked so as to yield the utmost strength in the finished product and when so cooked and partially bleached any shives or fiber bundles that exist therein are more noticeable than in the unbleached pulps. By rodding before the bleaching operation it is possible to produce absolutely uniform products bleached to any degree desired. In fact it is possible to carry on the bleaching in the rod mill simultaneously with the rodding by maintaining alkaline conditions and bleaching steps that ordinarily take from one to two hours are performed in a single passage through the mill. Strong kraft pulps are bleached to a cream color by this procedure with the consumption of twenty per cent of standard bleaching powder in the ten minutes required to pass through the mill.

Treatment of Dry Pulp Sheets or Paper Broke

One of the most satisfactory applications of beating with rods is in the pulping of hard dry pulp sheets, hard sized paper broke, and even glassine broke. Treatment of material of this type in beaters or mixing vats at consistencies at which they can be operated results either in stock in which flakes of paper occur with the fibers still unseparated by the treatment or the treatment must be prolonged at excessive power cost and serious loss in strength of the stock. Steam is also used in excessive amounts to break down the bond between the fibers and the heat thus introduced is often the cause of complications on the paper machine or in the size characteristics of the finished paper. Treatment of dry pulp sheets or paper in the rod mill with sufficient water to yield a stock of 20 per cent consistency results in a perfectly defibered product, free from lumps or fish eyes and, in the case of unsized pulp sheets, without the aid of heat or chemical. In the case of hard sized paper or glassine caustic soda up to thirty pounds per ton of paper treated is advisable and in extreme cases steam is also blown into the mill. The amount required, however, to heat the stock to any temperature is only one fifth of what is needed in beaters so that the cost is negligible.

Relationship of Freeness to Strength

In the development of strength with beaters and jordans certain definite relationships of freeness and strength and freeness and formation on the paper machine are usually associated with different types of pulps. In studies of the action of the rod mill on these pulps a different relationship was indicated. The strength and freeness of several typical stocks treated in the rod mill, in the beater and in the jordan will illustrate this point.

	Rod Mill		Beater		Jordan	
	Freeness	Strength	Freeness	Strength	Freeness	Strength
Unbleached Sulphite.	740	49	716	50	560	56
	670	67	600	72	430	63
	620	87	230	91	...	..
	648	77	...	..	...	..
Bleached Soda	525	30	400	29	...	..
	318	48	250	34	...	..
	...	..	180	38	...	..
Bleached Corn Stalk Soda Pulp	254	98	100	64	...	..
Screenings from Recovered Paper Stock	443	49	...	..	150	48

It is apparent from study of the above that the rod mill consistently gave a stock with much greater freeness with the development of a certain degree of strength. In long fibered pulps such as sulphite the difference is less than with shorter fibered pulps. Kraft pulp behaves similarly to sulphite but unfortunately actual results cannot be included because the records are not now in the writer's possession. The drop in freeness in the development of strength in the jordan is much greater than either in the beaters or the rod mill. The difference in the relationship of strength to freeness in short fibered pulps is even more marked.

The formation of paper, however, is much more easily accomplished with stock treated in the rod mill. Fig. 1 shows the formation obtained with unbleached sulphite beaten in the rod mill to a strength of 67 and a freeness of 670 while Fig. 2 shows the formation obtained with pulp from the same day's run and stock chest hydrated in a jordan to a strength of 63 with a resultant freeness of

430. The rodmilled stock has formed paper with fibers more uniformly distributed at a freeness of 670 than the jordaned pulp at a freeness of 430. The tendency of the jordaned stock to clot is entirely absent from the stock treated in the rod mill.

Not only can formation and strength be obtained at much greater freeness with stock treated in the rod mill but the power required to accomplish the results is usually less than half. The power consumption for the pulps treated as indicated in the table above was taken in some instances and is given below.

	Rod Mill		Jordan	
	Strength	Kw-hr per ton	Strength	Kw-hr per ton
Unbleached Sulphite	49	65	56	160
	67	130	63	190
	87	195	..	...
Screenings from Recovered Paper ...	49	50	48	307

In the case of the screenings the treatment required was that necessary to completely separate the fibers and the jordan was shown to be particularly inefficient for this purpose. In similar work on dried sheets of cornstalk pulp used in the work reported above the rod mill successfully reduced to slush stock free from fish eyes dried sheets which were rejected in several paper mills in the Lake States because they could not successfully reduce the pulp sheets to slush pulp free from fish eyes with any of the equipment available in their plants which were among the most efficient plants in that area. When the pulp was beaten long enough in standard equipment to completely brush out all of the small aggregations of fiber the strength of the pulp was destroyed to such an extent and the power required was so excessive that the material was absolutely incapable of use in the manufacture of commercial paper of any kind.

Increased Beater Strength From Rodmilled Pulp

An interesting characteristic of pulp that has been given a preliminary treatment in the rod mill is the greater strength that can be developed in subsequent beating over that possible with the same pulp beaten without having been treated in the rod mill. The following table of typical results taken from mill records on the beating strength of several hundred cooks of kraft pulp show the magnitude of this phenomenon. Pulp No. 1 was an exceptionally strong kraft pulp with a chlorine demand of 10 which also developed strength rather rapidly. Pulp No. 2 was a raw hard pulp with a chlorine requirement of 22 per cent and was too raw to produce a satisfactory sheet of No. 1 or No. 2 kraft wrapping or bag paper with standard beaters and jordans.

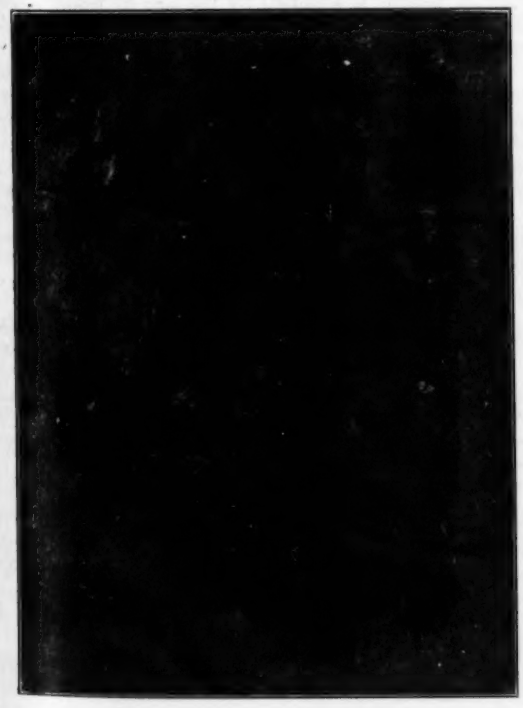

FIG. 1
Sulphite pulp sheet made after treatment with rods.

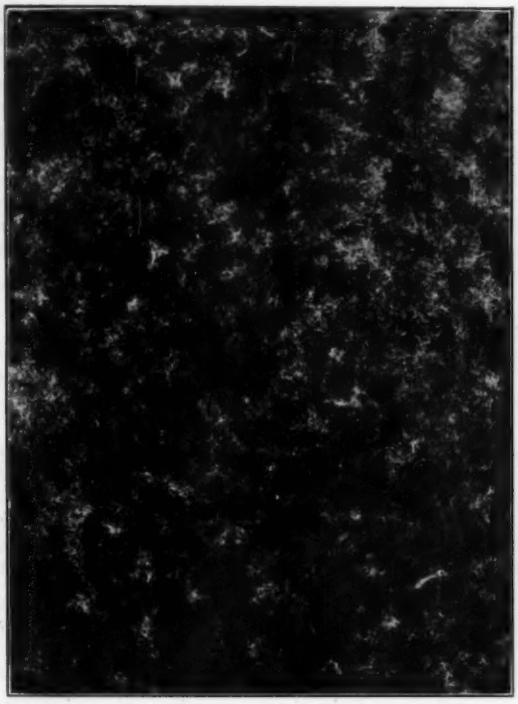

FIG. 2
Sulphite pulp sheet made after hydration in jordan.

EFFECT OF PRELIMINARY TREATMENT OF KRAFT PULP BY 7 x 16 MARCY ROD MILLS WITH FEED OF SIXTY TONS PER DAY

Beating Time Minutes	Pulp No. 1				Pulp No. 2					
	Unprocessed		Once Thru		Unprocessed		Once Thru		Thrice Thru	
	Burst	Tear	Burst	Tear	Burst	Tear	Burst	Tear	Burst	Tear
0	70	...	108	...	41	233	68	229	77	218
15	117	...	168	...	97	153	122	138	152	144
30	162	...	186	...	129	150	154	133	150	132
45	177	...	192	...	157	133	160	128	162	130
60	178	...	190	...	155	141	155	141	164	127
75	170	...	180	...	...	...	...	...	178	116

Bursting strength is given in units of pounds per square inch per pound per ream 24 x 36—480 x 100.

Tearing strength is given in units of grams per pound per ream 24 x 36—480 x 100.

Photomicrographs were made of Pulp No. 2 by the Forest Products Laboratory and are on file at that institution (*5*). Study of these photographs make apparent the fact that with passage of kraft stock through 7 x 16 foot Marcy rod mills at a rate of 60 tons per day there is no breaking down of fiber length or production of debris with either passage through once, twice or three times. After the third time through, however, a loosening of the first two or three outer layers of fibrils of the cell walls is apparent so that on subsequent treatment with the jordan true fibrillation rather than cutting is obtained.

The strength tests shown in the preceding table which were obtained after a beater treatment of thirty minutes

are particularly significant. It is felt that a treatment equivalent to fifteen minutes in the laboratory beater is all that is practical to give a high quality fiber in commercial jordans without injury to the fiber from the standpoint of paper of the utmost strength. Preliminary treatment of the stock by beating with rods made it possible to develop bursting strength well over 150 per cent with the beater treatment mentioned. This combination also gave the maximum combination of bursting and tearing strength with the exception of the tests on No. 2 pulps at 60 minutes' beating time which are out of line with all the other tests and obviously erroneous.

Beating of Kraft Pulp

The most notable application on kraft pulp was in 1928 in which three Marcy rod mills were installed to handle from fifty to sixty tons of kraft pulp each followed by a final washing. The mills were seven feet in internal diameter and sixteen feet long and required 185 horsepower each. When fed at the rate of fifty tons of pulp with a chlorine number of about ten each, the strength of laboratory test sheets made on the pulps was raised from 65 to 108 per cent with a tearing test of 164. Comparative tests on the same pulp in standard hollander beaters rebuilt to give good circulation gave the following results:—

Power required to raise the test of one ton of unbleached kraft pulp from 65 to 108

Beaters	300 h.p.-hr.
Rod Mill	89 h.p.-hr.

The installation of the three rod mills referred to above made possible the satisfactory treatment of 130 tons of kraft pulp in the beater room which had been equipped only to treat effectively that amount of sulphite. Without these mills it would have been necessary to have tripled the beater capacity in order to have produced paper of equal quality. The distribution of power between the rod mills, beaters and jordans was usually as follows:—

Rod Mills	555 h.p.	15.7 Per cent
Beaters	1000 h.p.	28.1 Per cent
Jordans	2000 h.p.	56.2 Per cent
	3555 h.p.	100.0 Per cent

Mill tests indicated that the treatment obtained by this combination equalled the treatment attained by the following combination of beaters and jordans:

Beaters	3000 h.p.	66.7 Per cent
Jordans	2000 h.p.	33.3 Per cent

Examination of this data naturally suggests the question, "What would be the effect of increasing the proportion of the work done by the rod mills?" During weekends and at other times when the full capacity of the rod mills was not required for giving a single pass to the full production of the pulp mill, two were run in series and one test of twenty four hours was made with three in series.

One run with two in series was made for nine weeks. At the end of that time the results on the paper machines were tabulated with the following results.

SUMMARY OF EFFECT OF DOUBLE RODMILLING WITH FEED OF 60 TONS PER DAY, HARD COOKED KRAFT PULP OVER USUAL OPERATION WITH SINGLE RODMILLING

Increase in paper machine speed	1 Per cent
Increase in bursting strength	6 Per cent
Increase in tearing strength	8 Per cent
Decrease in density	20 Per cent

The total power consumption was somewhat less. The added power required by the extra rodmilling was more than compensated by the reduced power taken by the jordans during the period in which the pulp so treated was used. In the case of all kraft test liner the speed of making .016 point was increased eight per cent and in the case .012 calibre board the speed was increased 15 per cent. A very significant characteristic with rod milled pulp was the greater freeness of the stock when prepared to yield the most satisfactory formation on the paper machine. Greater bulk and flexibility of the paper made to meet definite strength specifications were also obtained.

On more careful analysis of the paper runs during the period when two mills were used in series it was found that on many of the runs the jordans had been used to a greater extent than necessary and past the point of optimum test with the result that considerable power was wasted without any increase in bursting strength and the tearing strength and flexibility of the paper was actually seriously impaired thereby. The average tearing strength stated above might just as well have been from twenty to thirty per cent greater with substantial savings in power and no loss in bursting strength had the operators been more familiar with the latent characteristics of the new pulp and had they entirely avoided passing the peak of maximum strength in setting the jordans. An analysis of the power consumption in horsepower hours per ton compared with strength of paper gave the following summary:

Duration of Operation	4 weeks	5 weeks	9 weeks	.....
Number of Rod Mills	None	One	Two	Two
Rate of feed per day	...	45 tons	60 tons	45 tons
Power, horsepower hours per ton, used by				
Rod Mills	...	102	154	205
Beaters	163	163	163	15
Jordans	332	332	332	220
Total	495	607	649	440
Bursting strength	90	95	100	105
Tearing strength	160	176	194	214

The first three columns are taken from actual performance, the fourth column is the result of analysis of the data and the following of the leads made obvious thereby. The power requirements of a simple batch mixer is used in the beater line of the fourth column because with double rodmill treatment at the rate of 45 tons per day no advantage or benefit is attained by the use of beaters and a batch mixer is all that is required for matching the color, sizing and other requirements of the furnish.

A rod mill run with three mills in series, which was made with a feed of 60 tons of pulp per day, might also be discussed. The pulp used was extremely hard, having a chlorine requirement of about 22 per cent. Such pulp could not have been used at all in the manufacture of satisfactory paper without rod mills. The run had a duration of 24 hours and was immediately preceded and followed on the paper machine by similar stock given a single rodmill treatment and twice as much time in the beaters. The summary of the results obtained is given below:—

POWER REQUIRED. HORSEPOWER HOURS PER TON OF PAPER

	Triple Rod Mill	Single Rod Mill
Rod mills	220	102
Beaters	62	163
Jordans	240	380
Total	522	635
Paper made, pounds per Hour on Paper Machine	4500	3600
Bursting Strength, per cent	109	95
Tearing Strength, per cent	220	205

The figures given are based on the tests made after the machine has been adjusted to each stock and had settled down to smooth operation. In each case some six or eight hours were taken to bring the machines up to the full production possible with the stock in use and to find the optimum adjustment of jordans, slices, etc.

Study of the results obtained in the commercial tests of long duration referred to above indicate quite conclusively that for breaking in kraft pulp and imparting to it the first third of the beating effect desired, the rod mill

is about three times as effective as beaters or jordans in the development of strength with the power expended. For the second third of the beating operation the rod mill is from 100 to 50 per cent more effective. The final third of the beating and refining operation can be most effectively done in the jordan type of refining engine which is also more adaptable to quick and easy adjustment. The use of the rod mill not only makes possible substantial savings in power but it also makes possible, when properly installed and operated, substantial improvement in the strength properties, formation, and quality of the paper produced.

The action of the rods on the pulp is purely one of flexing and distension without cutting or fibrillation and is similar to the action of kollergangs as practiced in Europe. According to McNeill (*6*) stronger paper can be made at higher speeds and greater freeness with pulps that have been treated in the kollergang and this is what occurs with pulp similarly treated with rods.

Literature Cited

(1) Wells, S. D., U. S. Pat. 1,986,907 (Jan. 8, 1935).
(2) Paper Trade J., 74, No. 25:47-50 (June 22, 1922).
(3) Tech. Assn. Papers, XV, No. 1:355-356 (June, 1932).
(4) U. S. Pat. 1,890,179 (Dec. 6, 1932).
(5) Simmonds, F. A., Forest Prod. Lab. Project 7000, J. 41, Problem C-208, (Mar. 11, 1931).
(6) Paper Trade J., 99, No. 26:25 (Dec. 27, 1934).

Evaluation of the Heat Input Into Alkaline Pulping Digesters*

By Harold R. Murdock[1]

When considering the steam required for pulping, the problem falls naturally into two considerations. First, the amount of heat necessary to bring the digester and contents to cooking temperature and to maintain this temperature until the blow period, and then, the distribution of this heat when the digester is blown. These problems have been considered by the Alkaline Pulping Committee of the Technical Association of the Pulp and Paper Industry during the past year, and this report treats of the first portion of the problem, namely, the heat input. The data, from which this report is compiled, are based upon that obtained in a questionnaire sent to many of the alkaline pulp mills in the United States and Canada. The replies were believed to represent a good cross section of the present practice. The data are found tabulated in this report.

It is common, in mills producing wood pulps, to use steam flow meters to measure the use of steam. Such records indicate clearly the uniformity of digester operation in so far as the amount of steam is concerned. However, it often is desirable to know whether such steam usage, although it may be uniform from cook to cook, is reasonable with the theoretical requirements which may be calculated from available data. Further, it is of practical value to know the extent to which the heat input is affected by factors such as cooking time, moisture in the wood, and amount of cooking liquor. These factors have been evaluated in the following discussion. It was the ambition of this committee to determine an average digester condition from the questionnaire replies and with these average conditions set up, a standard for calculating the amount of heat required for any digester operation.

The heat needed to raise a digester to temperature may be divided into three distinct divisions: I. The heat needed to bring the digester shell to temperature, II. The heat to bring the contents of the digester to temperature, and III. The radiation losses which consume steam before the actual blowing of the digester.

I. Heat Needed for the Digester Shell.

In order to determine this item, the weight of the digester shell must be known. In many cases the weight of the digester shell is known from shipping or purchase records. In other cases, it is necessary to compute the weight from the specific gravity of steel, 7.8, and the volume of the shell. To obtain the volume, the surface area of the digester and the shell thickness must first be known. If the radius and height are known, the surface area can be calculated readily since the digesters now employed, while sometimes spherical, are more often long cylinders whose ends are not conical but dished, permitting a very reasonable figure to be obtained by use of formula (1) below. However, often the volume only is available but by use of formula (3) the surface can be closely estimated.

$$\text{(1) Total area} = 2\pi R^2 + 2\pi Rh$$
$$\text{(2) Volume} = \pi h R^2$$

If we solve for h in (2) we get $h = V/\pi R^2$. Substituting this in equation (1):

$$\text{(3) Total area} = 2\pi R^2 + 2V/R$$

The committee finds that the radius of the average digester we are considering is 4 feet, so that the formula then becomes:

$$\text{Total area} = 32\pi + V/2 = 100.53 + V/2$$

The committee also finds the average digester volume to be 2270 cubic feet, so the surface, in the case of our average digester, is therefore 1235 square feet. Now the shell thickness of a digester varies, depending upon its age, from 1 to 1½ inches and here again it is necessary to take an average of 1¼ inches thickness of shell. The volume of the shell is, therefore, 1235 x 1.25/12 = 128.7 cubic feet. At a specific gravity of 7.8 for steel, the shell, therefore, would weigh 62,741 pounds. With a specific heat of 0.117 the water equivalent is 7,341 pounds. The weight of the fittings is regarded as negligible. It also is estimated that the digester shell cools down from its maximum temperature of 338 deg. F. to an average of 220 deg. F. between cooks, or before refilling begins after a blow. The heat required to raise the digester shell 118 deg. F., from 220 deg. to 338 deg., is, therefore, calculated as follows: 62,741 x 0.117 x 118 = 866,238 B.t.u.

The volume of 2-inch insulation is similarly calculated to be approximately 206 cubic feet. At 19 pounds per cubic foot, this volume of lagging would weigh 3,918 pounds. Its specific heat would approximate 0.20. The ultimate temperature of this lagging is estimated to be 234 deg., a mean between internal temperature of 338 deg.

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., Feb. 18 to 21, 1935.
[1] Chairman, TAPPI Alkaline Pulping Committee, Director of Research Department, Champion Fibre Company, Canton, N. C.

and external of 130 deg. (45 deg. above air temperature of 85 deg.). The mean temperature of this lagging at the start of a cook, following a preceding blow, is estimated to be 200 deg. F. For the 34 deg. rise, heat required is 3,918 x 0.20 x 34, or 26,610 B. t. u.

II. Heat to Raise Digester Contents to Temperature.

The specific heat of wood may be taken as 0.33. The 20,900 pounds of o. d. wood must be raised from an initial temperature of about 80 deg. F. to the final temperature of 338 deg. F.—a rise of 258 degrees. Heat required for this is 20,900 x 0.33 x 258, or 1,779,425, B.t.u. The 38.0 per cent moisture in the wood weighs 38.0/(100-38.0) x 20,900, or 12,810 pounds. Heat required by this water in the wood is thus 12,810 x 258, or 3,305,000 B. t. u. Heat to raise the 782 cubic feet of cooking liquor, with a density of 1.10, from 152 deg. to 338 deg. F., is 782 x 62.4 x 1.10 x 186 x 0.91, or 9,085,285 B. t. u. To raise the 264 cubic feet of black liquor, with a density of 1.11, from 165 deg. to 338 deg. F., is 264 x 62.4 x 1.11 x 173 x 0.91, or 2,878,720 B. t. u.

III. Heat Lost by Radiation During Cook.

The difference in temperature between the digester interior and the air is 338-85 or 253 deg. F. for the last 2.5 hours of the cook, and is considered to average 270-85 or 185 deg. F. in the first 18 hours of the cook, during which time maximum temperature is reached. The radiation losses through high class insulation in B. t. u. per hour per square foot may conservatively be taken as follows:

Insulation Thickness, inches	1½	2	2½	3
253 deg. F. Temperature Differential	80	62	48	41
185 deg. F. Temperature	55	43	34	28

Radiation losses from the 1235 square feet of surface thus will be:
For the first 1.8 hours: 1.8 × 1235 × 43, or 95,600 B.t.u.
For the last 2.5 hours: 2.5 × 1235 × 62, or 191,450 B.t.u.
Total ..... 287,050 B.t.u.

If the digester is equipped with uninsulated circulation pipes, there will be appreciable radiation losses from this source.

In converting B. t. u. to pounds of steam, the quality and degree of superheat should be considered. In general, a fairly accurate procedure is to credit the steam with its latent heat in B. t. u., for the condensate temperature is close to that of the steam, so that the heat of the liquid is not recovered in the digester (except at the start of a direct steamed cook). The steam used for a 338 deg. cook probably would be about 125 pound gage, which has a temperature of 353 deg. F. It is estimated that a pound of this steam, for digester heating, would yield 870 B. t. u., which is the latent heat of vaporization of saturated 125 pound steam. The theoretical heat requirements in B. t. u. divided by 870, for example, should closely check the actual steam consumption.

In the accompanying table showing the data for calculating the steam necessary for the average digester, there is another column in which anyone can calculate his own case as comparison. You will note that the committee has not attempted to calculate the radiation losses from the circulation lines. This is recognized as a relatively small value, varying a great deal in different installations.

Heat Consumed by Alkaline Digester

	Average	Your Case
I—To Raise Digester to Temperature		
A—Digester Shell	866,238	
B—Digester Insulation	26,610	
II—To Raise Digester Contents to Temperature		
A—Wood	1,779,425	
B—Water in Wood	3,305,000	
C—Cooking Liquor	9,085,285	
D—Black Liquor	2,878,720	
III—Radiation Losses During Cook		
A—From Digester	287,050	
B—From Circulation Lines, etc.		
Total B.t.u.	18,228,328	
Equivalent Steam, Pounds	20,952	
Steam per Ton AD Pulp, Pounds	4,135	

DERIVATION OF VALUES

I—A—Weight digester shell × .117 × deg. F. Temp. Rise.
B—Weight digester insulation × .20 × deg. F. Temp. Rise.
II—A—Weight O. D. Wood × 0.33 × deg. F. Temp. Rise.
B—Weight Water in Wood × deg. F. Temp. Rise.
C—Cubic Feet Cooking Liquor × 62.4 × Density × 0.91 × deg. F. Temp. Rise.
D—Cubic Feet Black Liquor × 62.4 × Density × 0.91 × deg. F. Temp. Rise.
III—A—Area in square feet × time in hours × coefficient for existing temperature differential.
B—Length Exposed Pipe in feet × time in hours × coefficient for given pipe size, and existing temperature differential.

$$\text{Pounds Steam} = \frac{\text{Total B.t.u.}}{\text{Latent Heat of Vaporization of Steam Used}}$$

Digester Data

Mill	Size Cubic Feet	Insulation Lining	Insulation Inches Thick	Nature	How Steamed
A	1300	None	2	Asbestos	Direct
B*	1350	None	1½	Magnesia 85 Per cent	Direct
C*	1575-1950	None	2	Asbestos	Direct
D	1970	None	3	Cement Cellulose	Indirect
E	2895	None	2	Magnesia 85 Per cent	Indirect
F	2550	None	3	Magnesia Blocks	Both
G	2500	None	2	Asbestos	Both
H	3360	None	1½	Magnesia 85 Per cent	Indirect
L	3360	None	1½	Magnesia 85 Per cent	Indirect
M	2640	None	2	Asbestos	Direct
N	1290	None	2½	85 Per cent Magnesia & Asbestos Cement	Direct
Average	2270	None	2.0		

* Rotary Type Digester.

Wood Charge

Mill	Kind	Moisture Content Per cent	Amount Cords	Amount O. D. Pounds	Amount Pounds Per Cord
A	Gum and Poplar	22	5.53	12,110	2265
B	Loblolly & Short Leaf Pine	46.4	6.43	15,250	2370
C	Pine & Hemlock	52	8.15	17,100	2100
D	Spruce	35	7.2	17,300	2400
E	Poplar	25	12.2	26,900	2200
F	Spruce, Fir, Pine	26	10.5	22,100	2100
G	Douglas Fir & Hemlock	38–53	9.56	23,000	2400
H	Pine	35	12.5	30,000	2400
L	Poplar	30	12.0	29,300	2440
M	Aspen	30	9.0	21,270	2364
N	Pine	51	5.95	15,450	2597
Average		38.0	9.0	20,900	2330

Liquor Charge

Mill	Cooking Liquor Volume Cu. Ft.	Temp. Deg. F.	Analysis NaOH (Pounds/Cu. Ft.)	Analysis Na_2S (Pounds/Cu. Ft.)	Analysis Na_2CO_3 (Pounds/Cu. Ft.)	Black Liquor Specific Heat Used	Black Liquor Volume Cu. Ft.	Black Liquor Temp. Deg. F.
A	676	126	3.56	0	0.31	...	...	...
B	354	177	4.20	2.21	1.46	...	200	177
C	333	160	4.85	1.99	1.65	...	...	...
D	475	145	4.05	1.35	0.75	0.89	275	165
E	1200	175	4.10	0	0.39	0.89	300	150
F	700	175	3.9	1.7	0.7	...	800	180
G	700	158	4.31	1.13	0.75	...	210–500	140
H	1190	160	2.71	1.39	0.48	0.90	480	180
L	1320	165	4.10	0	0.47	0.90	435	180
M	1332	77	3.06	0	0.42	1.0	...	...
N	327	150	4.36	2.09	1.29	0.89	65	130
Avg.	782	152	4.05[s] 3.94[s]	1.69[s] 0[s]	1.01[s] 0.40[s]	0.91	264	165

s—Kraft.
s—Soda.

Cooking Data

Mill	Temp., Deg. F.	Time, Hours	Yield, Pounds A.D. Pulp
A	326	5.5	6,200
B	325	3	7,680
C	342	...	8,454
D	345	3.75	8,180
E	350	5	14,000
F	335	4.5	10,800
G	338	4	11,000
H	340	4.8	14,000
L	340	6.1	14,000
M	342	5	10,172
N	330	3	7,000
Average	338	4.3	10,135

Electric Drive for Cylinder Machine Wet End*

By G. A. Peterson[1]

It has been recognized by the paper industry for some time that the conventional method of using the first felt as a belt for driving the wet end of a cylinder machine has a number of disadvantages. The load to which the felt is subjected, causes it to stretch and in so doing the felt is narrowed, closing up the weave. In this condition the felt very rapidly fills up, retarding the flow of water through it. To carry the load of driving the various units the felt must have a weave and texture to withstand this strain, and, therefore, it is made quite coarse and of heavy weight to obtain a reasonable life. Making the felt fairly heavy, of course, retards water removal and as felts are sold on a pound basis, the heavy weight felts are expensive to purchase.

Difficult to Obtain Uniform Conditions

Due to the necessity of using coarse felts under high tension for rotating the units of the wet end, it is difficult for the paper maker to obtain uniform conditions on the machine. The presses cannot be weighted as heavily as the paper maker would like, due to crushing the sheet, and, consequently, less water is removed by this economical method, and the sheet goes into the dryer section with more moisture than it should.

The paper machine builders have been aware of these facts and in the past attempts have been made to drive some of the wet end units mechanically, through gears, belts, etc. These methods have not proved entirely satisfactory, as no real good way had been devised for taking care of the constantly changing diameters of the various rolls, as well as slight differences in speeds between the various units caused by these varying diameters.

Complete success was finally attained in removing practically all tension in the felt by the application of individual motor drives on each unit of the wet end, thus allowing the papermaker to use a light open felt and use it for its primary purpose, namely as a vehicle to carry the sheet and for rapid removal of water. At the same time the initial cost of the felt is reduced due to using a lighter felt and the felt life is increased, due to removal of the high tension under which it operated previous to the event of the motor drive.

Application of Electric Drive to Wet End

The electric type of drive is applied to the wet end of a cylinder machine as follows:—Motors are direct connected through floating type flexible couplings to the rolls which are to be driven. Another way is to use a chain drive between motors and rolls. When completely equipping the machine with auxiliary drives the motors drive the cylinder molds or cylinder couch rolls, the lower rolls of the primary presses, the top and bottom roll of the suction primary if there is one on the machine, the strain roll, the suction drum roll, either the top or bottom extractor rolls and the top press roll.

The current for driving these motors is supplied from a generator, which in turn is driven from the bevel gear unit driving the first press. Therefore, as the speed of the paper machine varies, the speed of the generator will fol-

*Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., Feb. 18 to 21, 1935.

[1]Rice, Barton & Fales, Worcester, Mass.

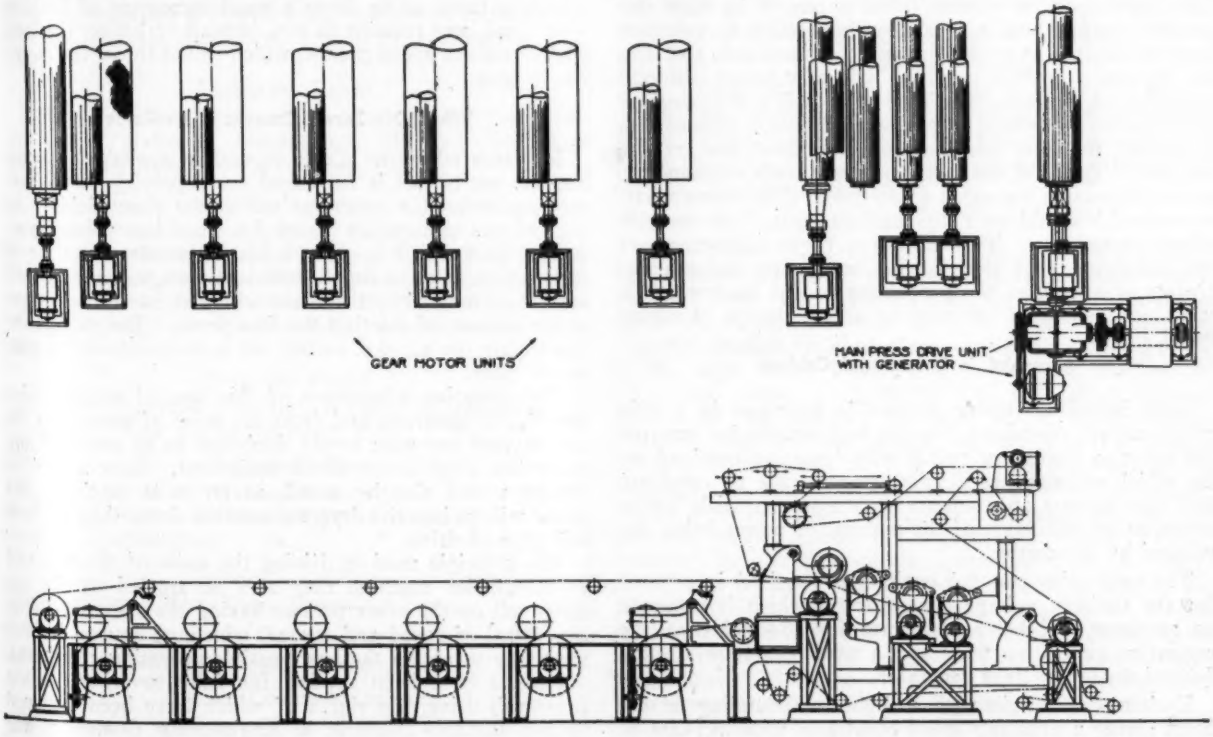

FIG. 1

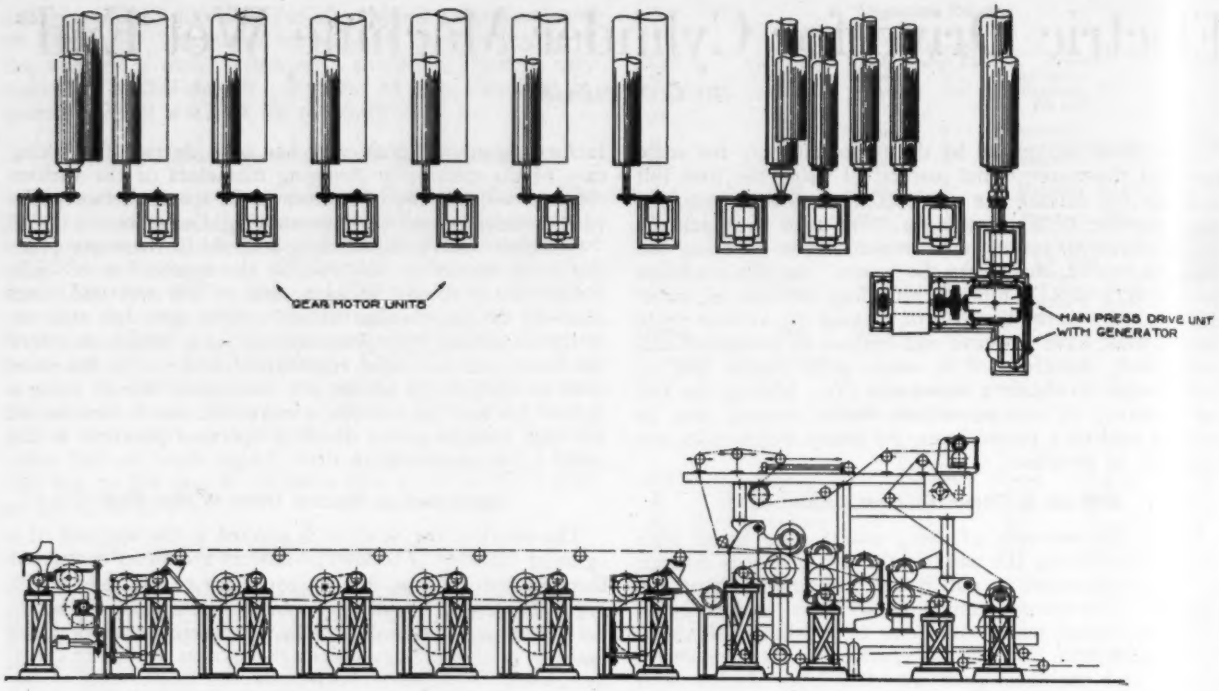

FIG. 2

low the speed of the machine in direct proportion. The voltage of the generator varies in direct proportion to its speed, and as this voltage is impressed on the individual motors, the motors rotate in step with the paper machine. The amount of torque required for driving each roll is controlled through a manually operated field rheostat. This feature of the electric drive is one of its most important features, as it is almost impossible to calculate theoretically the exact h.p. required beforehand, and also the amount of power required will vary under different operating conditions. The ease with which the operator may control the power output of each motor enables him to obtain the best possible operating condition on the machine. The field rheostat provides enough resistance to permit increasing the speed of the motor 25% above whatever speed it would normally run by reason of the variable voltage generator. In operation a slight adjustment of the individual field rheostat for any motor actually increases or decreases the proportion of the load which it takes on, instead of effecting an actual change of motor speed.

Arranged in Drip Proof Cabinet

Each individual motor control is arranged in a drip proof cabinet, contains a rheostat with handle for external operation; a disconnect switch with fuses; an overload relay which extinguishes a pilot lamp in case of overload, and also mounts an ammeter with a proper scale which serves as an indication of the amount of power being developed by the motor.

The only other control equipment required is a panel for the variable voltage generator on which is mounted an ammeter, voltmeter, rheostats for the fields of the respective generating units and a small contactor for the field of the low voltage generator.

Each motor is built with a slight compounding on the fields giving a drooping speed regulation with increase of current. This serves two purposes: 1st. It makes possible the effect just mentioned, whereby slight rheostat adjustment will regulate the amount of load assumed by the motor without throwing the motor out of step with the other motors, and, secondly, it provides a certain amount of inherent or automatic speed regulation, whereby if a change in conditions in the machine occurs, the motor automatically takes on or drops a small increment of its previous load, and remains in step instead of letting the load change cause a speed change, which would throw the motor out of step.

Where No Direct Current is Available

In plants where no direct current is available, a small a.c.-d.c. exciter set is furnished for supplying direct current excitation for generator and motor shunt fields. As part of this same set is included a small low voltage generating unit which is given initial adjustment at time of installation, so as to supply sufficient voltage to the several individual motors so that they will just barely turn over at the instant of starting the first press. The switch for controlling the a.c.-d.c. exciter set is mounted on the generator panel.

The operating advantages of this type of electric drive are readily apparent, and from the point of economics the felt savings per year would doubtless be as much, if not more than original cost of the equipment. Some steam for drying would also be saved, as on most machines the paper will go into the dryers somewhat dryer than without this type of drive.

The principle used in driving the units of the wet end of a cylinder machine may also be applied to the top press roll on the other presses having the same flexibility of control of speed and torque, which, of course, is very necessary to obtain the best possible operating conditions.

Patents have been applied for fully covering the top press roll drive, the rights of which have been assigned to the Reliance Electric & Engineering Company, and Rice Barton & Fales, Inc.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING MARCH 30, 1935

CIGARETTE PAPER

R. J. Reynolds Tobacco Co., Paris, Havre, 28 cs.; Standard Products Corp., Paris, Havre, 22 cs.; Champagne Paper Corp., Paris, Havre, 802 cs.

WALL PAPER

F. J. Emmerich, Laconia, Liverpool, 5 bls.; ———, Kwanto, Maru Kobe, 12 bls.; W. H. S. Lloyd & Co., Ascania, Southampton, 2 bls., 7 cs.

WALL BOARDS

Treetex Corp., Scanstates, Stockholm, 4215 bdls.

NEWSPRINT

Jay Madden Corp., Stuttgart, Bremen, 135 rolls; Perkins Goodwin & Co., Stuttgart, Bremen, 96 rolls; Lunham & Reeve, Inc., Sagoporack, Hango, 233 rolls; Jay Madden Corp., Sagoporack, Hango, 568 rolls; Brooklyn Times, Hallaren, Hallstavik, 319 rolls; Gilman Paper Co., Hallaren, Hallstavik, 154 rolls; ———, Hallaren, Hallstavik, 116 rolls; Lunham & Reeve, Inc., Scanstates, Helsingfors, 254 rolls; Jay Madden Corp., Scanstates, Helsingfors, 212 rolls.

PRINTING PAPER

L. A. Consmiller, Stuttgart, Bremen, 25 cs.; Jay Madden Corp., Hallaren, Helsingfors, 78 bls.; Gondrand Shipping Co., Hallaren, Helsingfors, 125 bls.

WRAPPING PAPER

Standard Products Corp., Black Falcon, Antwerp, 2 cs.; F. C. Strype, Black Falcon, Antwerp, 6 cs.; E. Dietzgen & Co., Stuttgart, Bremen, 33 cs.; Walker Goulard Plehn Co., Sagoporack, Hango, 92 rolls; R. MacBratney, Caledonia, Glasgow, 2 cs.; Yardley & Co., American Merchant, London, 3 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Ascania, Southampton, 2 cs.; ———, New York, Hamburg, 8 cs.

FILTER PAPER

E. Fougera & Co., Paris, Havre, 33 cs.; A. Giese & Son, Paris, Havre, 77 bls.; H. Reeve Angel & Co., Inc., Ascania, Southampton, 3 cs.

COATED PAPER

Chas. Happel, New York, Hamburg, 2 cs.

SURFACE COATED PAPER

L. A. Consmiller, Stuttgart, Bremen, 8 cs.

METAL COATED PAPER

K. Pauli Co., Stuttgart, Bremen, 6 cs.; Globe Shipping Co., Stuttgart, Bremen, 5 crates.

PHOTO PAPER

J. J. Gavin, Berengaria, Southampton, 4 cs.; ———, Stuttgart, Bremen, 2 cs.

COLORED PAPER

International F'd'g Co., New York, Hamburg, 8 cs.; D. C. Andrews & Co., Stuttgart, Bremen, 1 cs.

DECALCOMANIAS

Sellers Transportation Co., New York, Hamburg, 29 cs.; Sellers Transportation Co., Bremen, Bremen, 24 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Laconia, Liverpool, 28 cs. (duplex).

TISSUE PAPER

Jay Madden Corp., New York, Hamburg, 41 bbl., 4 cs.; Jay Madden Corp., Sagoporack, Hango, 8 bbls.; W. J. Byrnes, Berengaria, Southampton, 3 cs.

TRACING PAPER

Saentis, Inc., Black Falcon, Antwerp, 1 cs.

COPY PAPER

———, American Merchant, London, 6 rolls.

MISCELLANEOUS PAPER

W. Bersch, New York, Hamburg, 1 cs.; Japan Paper Co., Pr. Pierce, Kobe, 54 cs.; J. W. Masters & Co., Paris, Havre, 3 cs.; Coty Processing Co., Paris, Havre, 16 cs.; Japan Paper Co., Ascania, Southampton, 1 cs.; Japan Paper Co., Maasdam, Rotterdam, 3 cs.

BAGS, BAGGINGS, ETC.

———, Kwanto, Maru Osaka, 75 bls. rags; ———, New York, Hamburg, 1742 bls. cotton waste; Banco Coml. Italiane Trust Co., Lehigh, Manchester, 46 bls. paper stock; A. W. Fenton, Inc., Lehigh, Manchester, 28 bls. bagging; Walker Goulard Plehn Co., Lehigh, Manchester, 68 bls. rags; Leigh Textile Co., Lahigh, Manchester, 39 bls. cotton waste; E. J. Keller Co., Inc., Black Falcon, ———, 40 bls. bagging; W. Steck & Co., Black Falcon, Antwerp, 186 bls. flax waste; W. Steck & Co., Black Falcon, Antwerp, 148 bls. jute waste; Loumar Textile By Products Co., Black Falcon, Antwerp, 240 bls. jute waste; Whaling Waste Products Co., Black Falcon, Antwerp, 238 bls. jute waste; Castle & Overton, Inc., Black Falcon, Antwerp, 95 bls. paper stock; Darmstadt Scott & Courtney, Black Falcon, Antwerp, 132 bls. jute waste; N. Schwab & Sons, Black Falcon, Antwerp, 100 bls. cotton waste; Royal Manfg. Co., American Shipper, Manchester, 50 bls. cotton waste; M. Snedeker Corp., American Shipper, Belfast, 328 bls. paper stock; Castle & Overton, Inc., Waukegan, Dunkirk, 188 bls. bagging; E. J. Keller Co., Inc., Pr. Johnson, ———, 111 bls. rags; E. J. Keller Co., Inc., Pr. Johnson, ———, 37 bls. bagging; Chase National

Bank, American Merchant, London, 31 bls. rags; J. J. Ryan & Sons, Inc., Maasdam, Rotterdam, 133 bls. cotton waste; E. J. Keller Co., Inc., Quaker City, ———, 282 bls. paper stock.

HIDE CUTTINGS

American Express Co., Laconia, Liverpool, 446 bags.

CHINA CLAY

Whitaker Clark & Daniels, American Shipper, Liverpool, 390 bags.

CASEIN

———, New York, Hamburg, 30 bags.

WOOD PULP

Castle & Overton, Inc., New York, Hamburg, 675 bls. wood pulp, 135 tons; J. Andersen & Co., Sagoporack, Gdynia, 267 bls. sulphite, 53 tons; Parsons & Whittemore, Inc., Sagoporack, Gdynia, 500 bls. sulphite, 100 tons; Castle & Overton, Inc., Hallaren, Helsingfors, 1701 bls. sulphite; Lagerloef Trading Co., Hallaren, Helsingfors, 1122 bls. sulphite; Lagerloef Trading Co., Hallaren, Helsingfors, 662 bls. sulphate; Perkins Goodwin & Co., Scanstates, Gdynia, 300 bls. wood pulp, 46 tons.

WOOD PULP BOARDS

———, Sagoporack, Hango, 189 rolls, 46 tons; Lagerloef Trading Co., Hallaren, Helsingfors,, 13 rolls; Lagerloef Trading Co., Scanstates, Helsingfors, 13 rolls, 33 bls., 9 tons.

BOSTON IMPORTS

WEEK ENDING MARCH 30, 1935

Elliott Addressing Machine Co., Pr. Pierce, Kobe, 2 cs. paper; ———, Black Falcon, Antwerp, 26 bls. rags; True & McClelland, Black Falcon, Antwerp; 72 bls. paper stock; American Express Co., Black Falcon, Antwerp; 187 rolls wrapping paper; American Express Co., Laconia, Liverpool, 2 cs. card board; ———, Laconia, Liverpool, 407 bags hide cuttings; D. C. Andrews & Co., Laconia, Liverpool, 6 bls. bowl paper; G. F. Malcolm, Inc., Laconia, Liverpool, 17 cs. tissue paper; F. S. Webster Co., Laconia, Liverpool, 8 cs. tissue paper; Oxford University Press, Laconia, Liverpool, 11 cs. printing paper; Stone & Downer, Laconia, Liverpool, 11 cs. wrapping paper; Chase National Bank, Pr. Johnson, Bombay, 71 bls. rags.

PHILADELPHIA IMPORTS

WEEK ENDING MARCH 30, 1935

R. Blank, Black Falcon, Antwerp, 162 bls. rags; J. E. Bernard & Co., Black Falcon, Antwerp, 5 cs. printing paper; J. M. Hagy Waste Works, Black Falcon, Antwerp, 50 bls. rags; J. W. Hampton Jr. & Co., Scanstates, Helsingfors, 119 rolls newsprint.

BALTIMORE IMPORTS

WEEK ENDING MARCH 30, 1935

Congoleum Nairn Co., Waukegan, Havre, 444 bls. rags; Congoleum Nairn Co., Waukegan, Dunkirk, 185 bls. rags; Castle & Overton, Inc., Waukegan, Dunkirk, 125 bls. rags; E. J. Keller Co., Inc., Waukegan, Dunkirk, 177 bls. paper stock; Bulkley Dunton & Co., City of Norfolk, ———. 1000 bls. wood pulp; Bulkley Dunton & Co., Consul Corfitzen, ———, 3000 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING MARCH 30, 1935

———, Lehigh, Manchester, 182 bls. bagging; E. J. Keller Co., Inc., Waukegan, ———, 178 bls. flax waste.

NEWPORT NEWS IMPORTS

WEEK ENDING MARCH 30, 1935

Bulkley Dunton & Co., Kelkheim, ———, 3546 bls. wood pulp; Bulkley Dunton & Co., City of Hamburg, ———, 1250 bls. wood pulp.

Washington Pulp Mill Improvements

[FROM OUR REGULAR CORRESPONDENT]

SEATTLE, Wash., March 25, 1935—Marketing of Northwest paper and pulp products throughout world buying marts is the comprehensive sales project now being waged by twenty operating Washington plants. The instrument used to fire the heavy sales promotion artillery is an expenditure of more than three million dollars for plant technical improvements which has been under way in Washington state for the past year.

That Washington pulp companies are making a concerted drive on world marts as potential outlets for their products is indicated in a recent survey of the industry. Some twenty mills now in production are making an unprecedented drive for sales expansion. One of the industry "bright spots" in this section is the report that the new Weyerhaeuser mill at Everett, Wash., will open for production early next year.

Installation of new plant equipment and modern chemical processes are reported to be under way in many Washington plants at this time.

Although individually plants are carrying on mill improvements to the betterment of their own facilities, collectively they are pointing for a sizeable share of world paper and pulp business. Then, too, they are desirous of producing the world's best sulphite pulp. Washington pulp goes into the production and manufacture of such products as: rayon, magazine, book and bond papers, lacquers, plastics, artificial leather, cellophane and a variety of practical items. The practicability of pulp in center sheets for safety glass is being given a thorough test by one Washington pulp organization.

Leaders point out that adoption of the paper and pulp code and its development of grading classifications stimulated a move by pulp interests in this section to launch a program of mechanical improvements and modernizing to plant units.

Atlin-Southern Paper Co. Formed

KINGSPORT, Tenn., March 30, 1935—The Atlin-Southern Paper Company, wholesale jobbers, carrying a complete line of paper products, has been established in Kingsport and will be a distribution center for several states included in its vast territory.

At the present time the new concern is working out of offices at the Kingsport Inn but will be located in its new quarters, in the building formerly occupied by the Silver Knit Hosiery Mills on Market street, on or before April 1.

Mr. Austin Gatlin, who will manage the business, comes to Kingsport from Chillicothe, Ohio where he has been engaged in similar work for a number of years. Associated with him will be D. W. Atler, also of Chillicothe.

Practically every nationally known and advertised brand of product will be handled through the new company. Many of the products to be sold are made in Kingsport.

Mills to be represented are Mead Corporation of Kingsport; Chillicothe Paper Company, Chillicothe; Aetna Paper Company, Dayton, Ohio; Continental Paper and Bag Company, New York; Southern Kraft Corporation, Mobile; Union Paper and Bag Company, New York and numerous others.

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WOOD PULP
AGENTS

PRICE & PIERCE, Ltd.,

60 EAST 42nd ST.
NEW YORK

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, April 3, 1935.

During the past week the local paper market was only moderately active. Demand for the various grades was irregular. The outlook for the future, however, is considered promising by the sales forces of the leading paper organizations. Prices are generally holding to formerly quoted levels.

The newsprint paper market continues active, with advertising volume running slightly ahead of last year. Production is being maintained at a satisfactory pace. Stocks at the mills are not excessive. The price situation, however, continues uncertain, although efforts are still being made towards stabilization.

Demand for the various grades of fine paper has fallen off slightly. Prices, however, are fairly steady. Tissues are moving into consumption freely. The coarse paper market is practically marking time. Box board is in fairly persistent request, with prices inclined to be firmer.

Mechanical Pulp

The position of the ground wood pulp market is practically unchanged. Manufacturing operations in the United States, Canada and abroad are being maintained in sufficient volume to take care of current requirements. Prices are holding to schedule and reports of shading are infrequent.

Chemical Pulp

Trading in the chemical pulp market has been fairly brisk since the recently revised quotations were announced. Kraft pulp continues to exhibit a strong undertone. Domestic and imported bleached sulphite is quoted at from $2.50 to $2.60, and all prime easy bleaching at $2.05, per 100 pounds, on dock, Atlantic, Gulf and West Coast ports.

Old Rope and Bagging

The old rope market is showing signs of improvement. Demand for both domestic and imported old manila rope is slightly better. Small mixed rope is moving in fairly good volume. The bagging market is displaying strength. Gunny bagging is more buoyant, while scrap bagging is steady. Roofing bagging is rather quiet.

Rags

News comes from Paris that the Minister of Commerce and Industry has published a degree prohibiting provisionally the export, re-export and indirect export of rags, vegetable fiber and all small articles useful only for papermaking. Exceptions may be accorded under conditions to be determined by the Finance Minister.

Waste Paper

The paper stock market experienced no radical changes during the past week. The higher grades of waste paper are fairly steady. The board mills are displaying a moderate amount of interest in the lower grades, although quotations on both strictly folded news and No. 1 mixed paper continue low.

Twine

Steadiness prevails in the local twine market. Demand for the various varieties is well sustained and should continue lively until the end of the Easter holidays, at least. Despite the usual keen competition for desirable orders, prices are generally holding to schedule, without difficulty.

Opposes Reiners Bill for Stream Regulation

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, April 1, 1935—Alexander Thomson as head of the Ohio Chamber of Commerce this week took a decided stand in opposing the Reiners bill which gives the regulation of stream pollution to the State Conservation Commission. The bill is now before the Legislature. Mr. Thomson made a special trip to Columbus in the interest of the plan to keep stream pollution and river regulation in the hands of the Ohio Board of Health.

In this movement he is being backed by the paper manufacturers of the Miami Valley and other sections of Ohio, where complaint has been made of stream contamination. It seems that unjust complaints have been made against paper mill men who always have sought not only to avoid river and stream pollution but have gone to considerable expense properly to handle refuse liquors and other foreign matter from their mills.

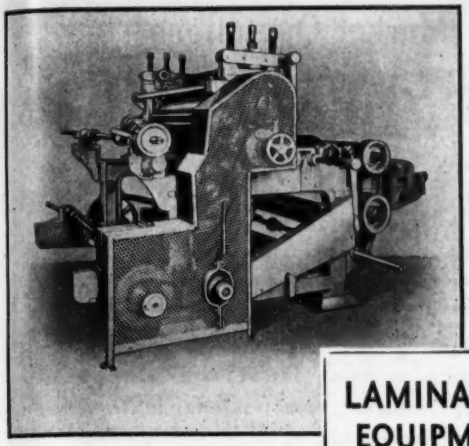
The manufacturers have repeatedly indicated their willingness to cooperate, yet every time fish are killed by the wholesale in the Great Miami river or its tributaries, a great hue and cry is raised against paper mills.

One of the notable instances in which a paper mill company expended thousands of dollars to control contamination was that at Cedarville where the mill owners were cited to appear in court to answer charges, but it developed that the mill had resorted to every means known at that time, several years ago, to prevent pollution. By the installation of most expensive equipment, the difficulties were finally overcome.

Mr. Thomson said that the public health would be more adequately conserved by leaving the question of stream pollution in the hands of the health department.

"It is better to lose a few bass than to change our present system of protection," said Mr. Thomson. "I am a conservationist, but public health is more important than the welfare of wild life."

Mr. Thomson said he would ask the united support of the Ohio Chamber of Commerce to defeat the Reiners bill. Indications are that he is succeeding in this respect and that the battle against a change in the control of stream pollution may be won before the Ohio Legislature.



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Cincinnati, Ohio

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, April 3, 1935.

BLANC FIXE.—Conditions in the blanc fixe market are satisfactory. Prices are holding to schedule. The pulp is still quoted at from $42.50 to $45 per ton, in bulk; while the powder is selling at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—The bleaching powder is marking time. The prevailing demand is irregular. Contract shipments are moving rather slowly. Prices remain unchanged. Bleaching powder is quoted at from $1.90 to $2.15 per 100 pounds, in drums, at works.

CASEIN.—The casein market is fairly active. Domestic standard ground is quoted at 12½ and finely ground at 13 cents per pound; Argentine standard ground at 13 and finely ground at 13¼ cents per pound; and French standard ground at 13¼ and finely ground at 13½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Steadiness prevails in the caustic soda market, although demand is only moderately active. Solid caustic soda is quoted at from $2.60 to $3.10; while the flake and ground are selling at from $3 to $3.05 per 100 pounds, in drums, at works.

CHINA CLAY.—The china clay market is displaying strength. Prices are holding to schedule, in most instances. Imported china clay is quoted at from $13.50 to $21 per ton, ship side; while domestic paper making clay is selling at from $6.50 to $12 per ton, at works.

CHLORINE.—Some improvement is noticed in the chlorine market. Paper mill demand is more persistent. Prices are steady to firm. Chlorine is quoted at from $2 to $2.40 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market is softer. Paper making gum rosin is now quoted at $4.35 and wood rosin at $4.40 per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent rosin size is selling at $2.55 per 100 pounds, in tank cars, at works.

SALT CAKE.—Demand for salt cake is fairly brisk. Prices are holding to formerly quoted levels. Salt cake is quoted at from $12 to $13 and chrome salt cake at from $11 to $12 per ton, at works. Imported salt cake is selling at from $12 to $13 per ton, on dock.

SODA ASH.—The soda ash market is exhibiting a fairly strong undertone. Shipments against contract are moving in normal volume. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows; in bulk, $1.05; in bags, $1.20; and in barrels, $1.50.

STARCH.—The starch market is slightly easier. Demand is rather listless and the contract movement is only moderately active. Prices are irregular. Special paper making starch is quoted at $3.47 per 100 pounds, in bags; and at $3.74 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Demand for sulphate of alumina is well sustained. Prices are holding to schedule, without difficulty. Commercial grades are quoted at from $1.35 to $1.50; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market is steady. Sulphur is quoted at $18 per long ton, on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—Business in the talc market is proceeding along routine lines. The contract movement is average. Domestic talc is quoted at from $16 to $18 per ton, at eastern mines. Foreign talc prices are nominal.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	6.50	@	—
Bonds	6.00	@	—
Index	6.00	@	—
Writings—			
Extra Superfine	6.50	@	—
Superfine	6.25	@	—
Tub sized	5.75	@	—
Engine sized	5.50	@	—
Book, Cased—			
S. & S. C.	5.35	@	5.75
S. & S. C. Litho.	5.60	@	6.00
M. F.	5.10	@	5.50
Coated and Enamel	5.90	@	6.55
Coated Litho	5.90	@	6.55
Tissues—Per Ream—			
White No. 1	.82½	@	.85
White No. 2	.67½	@	—
Anti-Tarnish M. G. only	1.00	@	—
Colored	.85	@	—
Kraft	.70	@	—
Manila	.67½	@	.70
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Butchers	4.00	@	4.50
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
Common Bogus	1.50	@	3.00
Screenings	2.50	@	3.50
Glassine—			
Bleached	.11	@	—
Unbleached	.09	@	—

(The following Quotations are Delivered New York)

News, per ton—			
Roll, contract	40.00	@	—
Rolls, spot	40.00	@	—
Sheets	45.00	@	—
Kraft—			
No. 1 Northern	4.12½	@	4.75
Standard	4.00	@	—
Southern	3.87½	@	—
Boards—per ton—			
News	40.00	@	45.00
Chip	37.50	@	40.00
Sgl. Mla. Ll. Chip	45.00	@	47.50
Jute Lined Chip	45.00	@	47.50
White Patent Coated	55.00	@	57.50
Binders Boards	67.00	@	75.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	21.00	@	22.00
Dry	21.00	@	22.00
(F.o.b. Mill)			
No. 1 Domestic and Canadian	18.00	@	24.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Division 1	2.60	@	—*
Division 2	2.55	@	—*
Division 3	2.50	@	—*
Prime Qualities—			
Class 1. All Prime Easy Bleaching	2.05	@	—*
Other Than Easy Bleaching—			
Class 2. Higher Than Standard	2.00	@	—*
Class 3, Standard	1.95	@	—*
Class 4. Lower than Standard	1.90	@	—
(On Dock, Atlantic Ports)			
Kraft No. 1	1.70	@	1.80
Kraft No. 2	1.50	@	1.60
(F.o.b. Pulp Mill)			
Kraft Domestic	1.70	@	2.35
(Delivered)			
Soda Bleached	2.50	@	—

*Add 60 Cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	5.75	@	6.00
Silesias No. 1	3.75	@	4.00
New Unbleached	6.25	@	6.50
New Soft Blacks	3.00	@	3.25
Blue Overall	3.50	@	3.75
Fancy	2.50	@	2.75
Washables	1.75	@	2.00
Mixed Khaki Cuttings	3.00	@	3.25
O. D. Khaki Cuttings	3.75	@	4.00
Men's Corduroy	1.50	@	.75
New Mixed Blacks	2.50	@	2.75

Old Rags

White, No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.75	@	3.25
White, No. 2—			
Repacked	1.75	@	2.25
Miscellaneous	1.50	@	1.75
Thirds and Blues—			
Repacked	1.50	@	1.75
Miscellaneous	1.25	@	1.50
Black Stockings	2.50	@	3.00
Roofing Rags—			
No. 1	1.20	@	1.30
No. 2	1.10	@	1.15
No. 3	.95	@	1.00
No. 4	.95	@	1.00
No. 5A	.80	@	.85

Foreign Rags

New Rags

New Dark Cuttings	1.75	@	1.85
New Mixed Cuttings	1.80	@	1.90
New Light Silesias	3.75	@	4.00
Light Flannelettes	3.75	@	4.00
Unbleached Cuttings	6.50	@	6.75
New White Cuttings	6.56	@	6.75
New Light Oxfords	3.25	@	3.50
New Light Prints	2.75	@	3.00

Old Rags

No. 1 White Linens	7.50	@	8.00
No. 2 White Linens	6.50	@	7.00
No. 3 White Linens	4.50	@	5.00
No. 4 White Linens	2.25	@	2.50
No. 1 White Cotton	4.25	@	4.75
No. 2 White Cotton	3.25	@	3.75
No. 3 White Cotton	2.50	@	2.75
No. 4 White Cotton	1.90	@	2.15
Extra Light Prints	2.00	@	2.25
Ord. Light Prints	1.75	@	1.85
Med. Light Prints	1.55	@	1.65
Dutch Blue Cottons	1.75	@	1.85
French Blue Linens	2.30	@	2.40
German Blue Linens	2.15	@	2.25
German Blue Cottons	1.70	@	1.80
Checks and Blues	1.30	@	1.40
Linsey Garments	1.50	@	1.65
Dark Cottons	1.15	@	1.25
Old Shopperies	1.00	@	1.05
New Shopperies	.95	@	1.05
French Blues	1.70	@	1.80

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	1.50	@	1.60
Domestic	1.40	@	1.50
Wool Tares, light	1.40	@	1.50
Wool Tares, heavy	1.50	@	1.60
Bright Bagging	1.40	@	1.50
Manila Rope—			
Foreign	1.85	@	2.00
Domestic	1.75	@	2.00
Small Mixed Rope	1.10	@	1.35
New Burlap Cut	2.00	@	2.35
Hessian Jute Threads—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00

Old Waste Papers

(F. o b. New York)

Shavings—			
White Envelope Cuttings	2.60	@	2.70
Ordinary Hard White No. 1	2.10	@	2.15
Hard White No. 2	1.90	@	2.00
Soft White No. 1	1.70	@	1.80
Flat Stock—			
Stitchless	.65	@	.75
Over issue Mag.	.65	@	.75
Solid Flat Book	.45	@	.50
Crumpled No. 1	.35	@	.40
Solid Book Ledger	1.50	@	1.65
Ledger Stock	1.00	@	1.10
New B. B. Chips	.30	@	.35
Manilas—			
New Env. Cut	1.70	@	1.80
New Cuttings	1.35	@	1.45
Print	Nominal		
Bogus Wrapper	.40	@	.50
Container	Nominal		
Old Kraft Machine—			
Compressed bales	1.10	@	1.20
News—			
No. 1 White News	1.20	@	1.30
Strictly Overissue	.60	@	.65
Strictly Folded	.25	@	.30
No. 1 Mixed Paper	.15	@	.20

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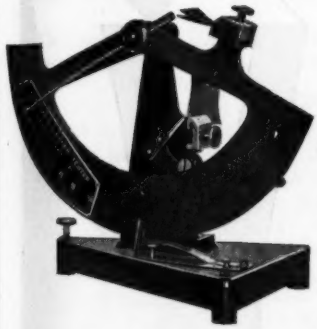

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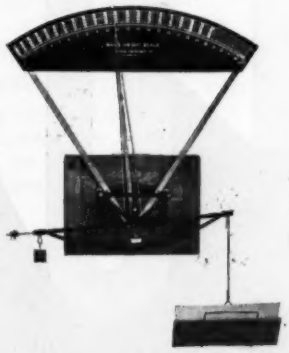

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PAPER TRADE JOURNAL

ESTABLISHED 1872

SIXTY-THIRD YEAR

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

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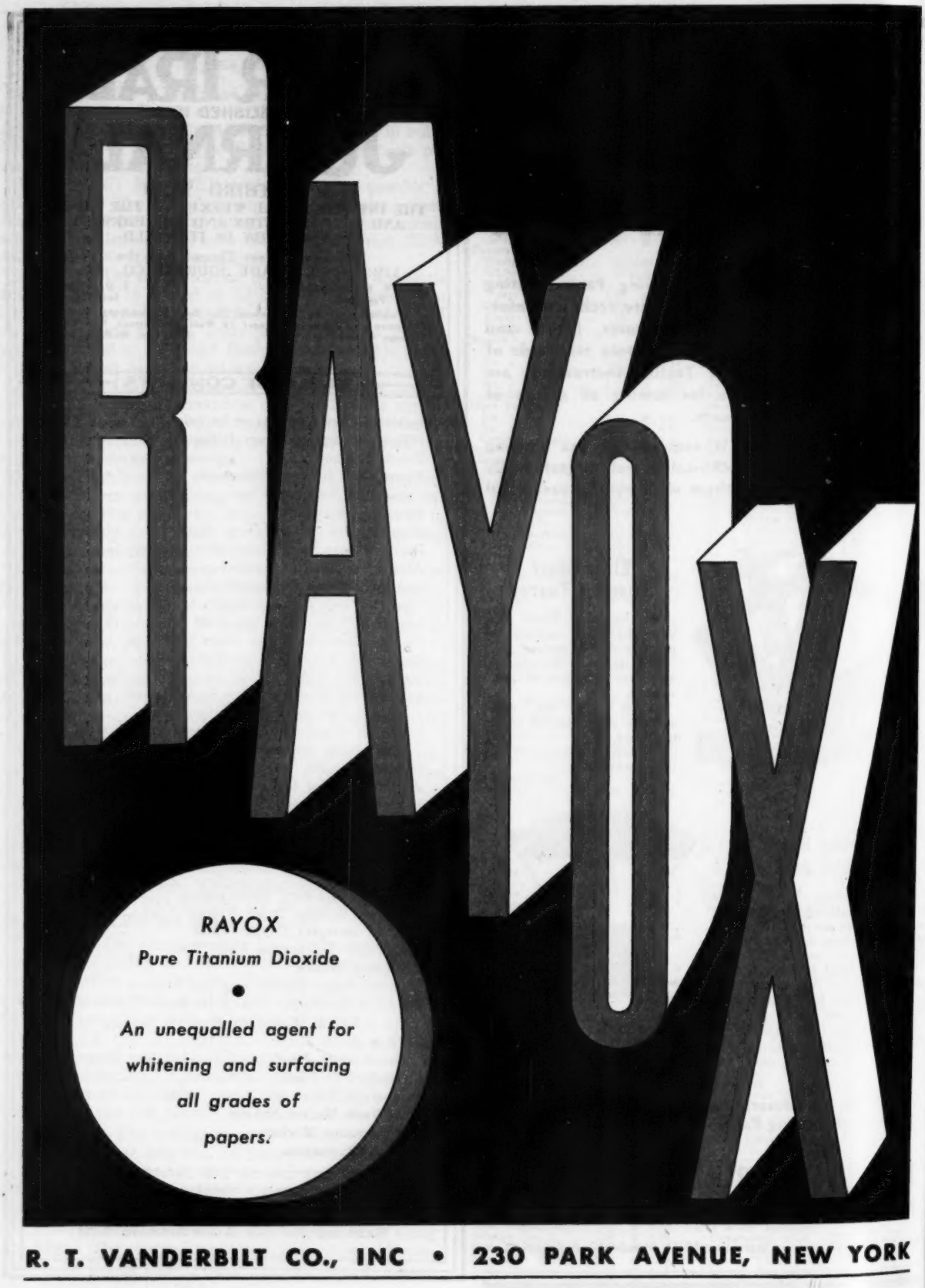
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